

Fresh Tomato Production and Marketing Trends in the N. American Market

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Agenda

- Fresh produce international trade and Mexico
- Effects of economic downturn on food markets
- Fresh tomato market supply and consumption
- Update on US fresh tomato imports
- Canadian greenhouse tomato trends
- USA greenhouse sector trends
- Mexican tomato sector trends
- Conclusions

First, Some Definitions and Clarifications

- Protected culture (PC) refers to the production method and ranges from plastic tunnels to shade houses to greenhouses. This is a movement along a continuum from more passive to more active control of the growing environment.
- Mexican fresh tomato sector: includes both open-field and PC and within PC both shade house and GH. Most PC is shade house and in Sinaloa growers may produce using shade houses, GHs and open-field. In central Mexico, where most GH production is located, there are dedicated GH growers, many of which are new to the tomato industry.
- The Canadian and US PC tomato industry is only GH (no shade house) and the growers are distinct from open-field growers.
- Canadian tomato production is almost all GH whereas in the US most fresh tomato production is open-field (mainly round mature greens but also round vine-ripes and romas).

First, Some Definitions and Clarifications

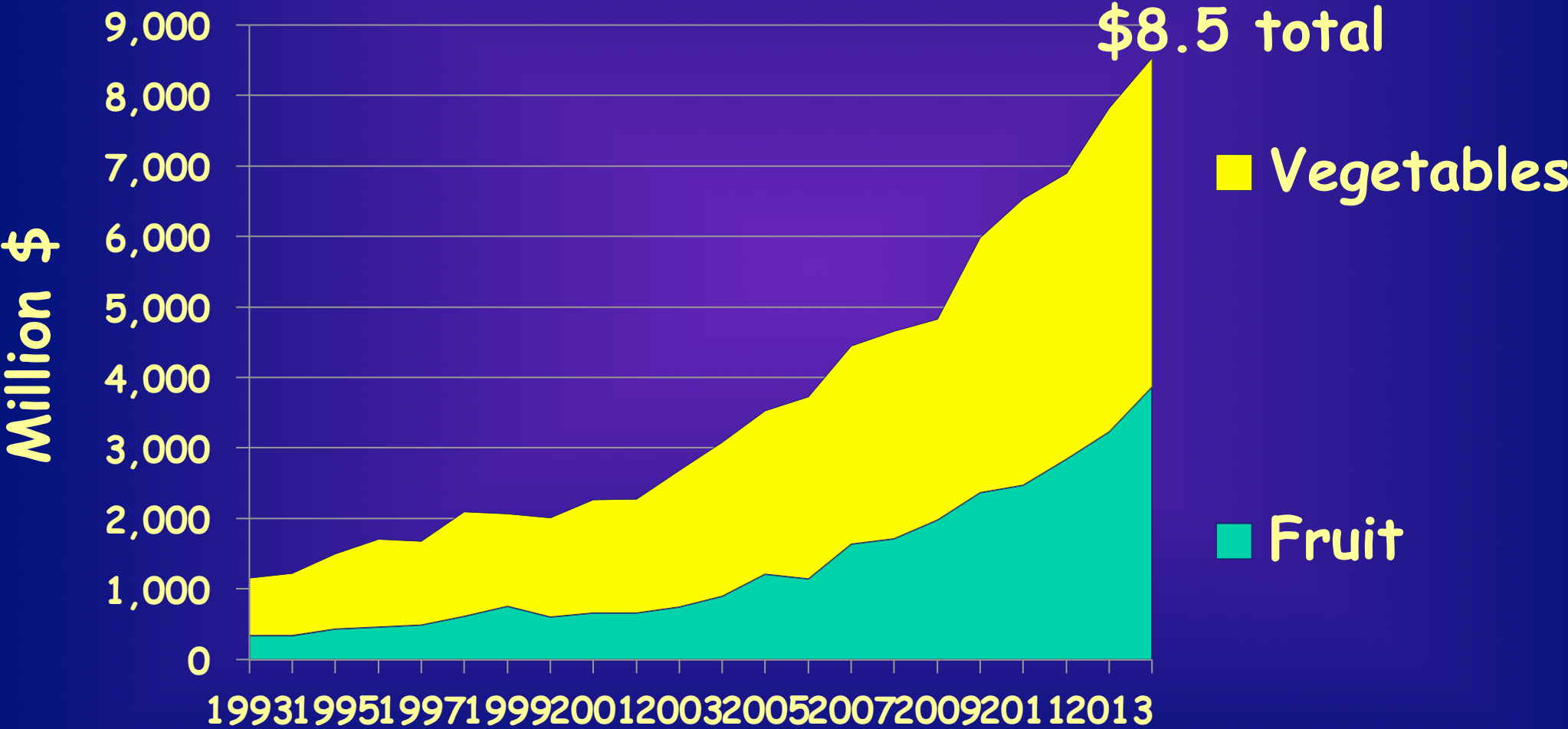
- Hothouse (HH) is a marketing term used by commercial buyers and consumers and refers more to the type of tomato vs the production method.
- The term HH will be used when referring to tomatoes sold at retail since scanner data includes two specific types of HH tomatoes, tomatoes-on-the-vine (TOVs or clusters) and round HH (with the calyx on, also referred to as beefsteaks).
- The Canadian and US GH industries started with round HH tomatoes, then TOVS and more recently small snacking tomatoes.
- For technical production reasons, most TOVs grown in Mexico are grown in GHs. However, round HH tomatoes (with calyx) are grown in both shade houses and greenhouses. Hence, in referring to tomatoes grown in Mexico using PC, the broader marketing term HH will be used.

Fresh Produce International Trade and Mexico's Changing and Growing Role

NAFTA Fresh Produce Trade

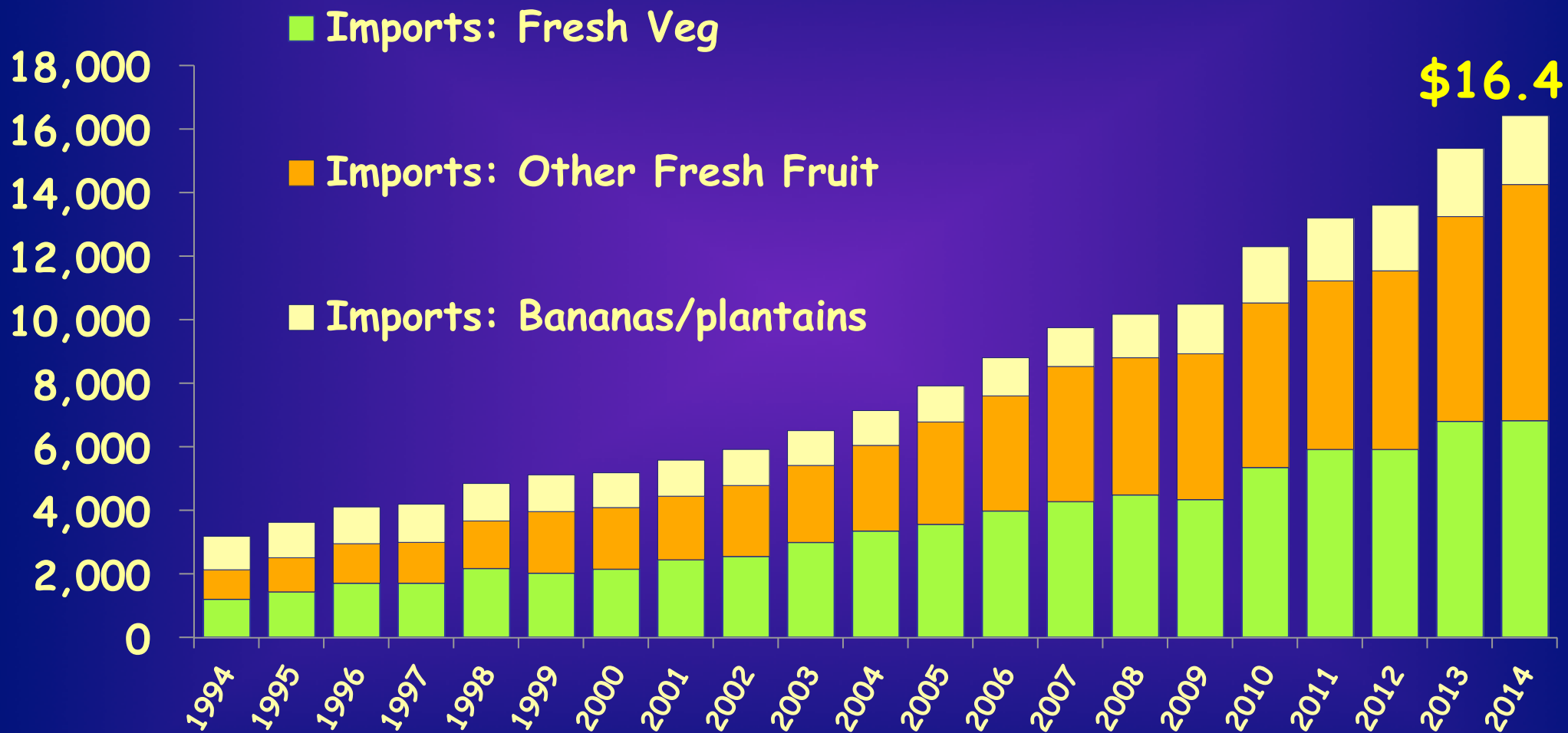
- N. American fresh veg trade mainly intra-NAFTA!
- 77% of US fresh vegetable exports go to Canada, then 8% to Mexico.
- 2/3's of US fresh veg imports come from Mexico; most of the remainder from Canada.
- Fresh fruit trade is diverse - beyond NAFTA.
- Typically Mexico was much more of a veg than a fruit exporter. This is changing.

US Imports of Fresh Fruit and Vegetables from Mexico, 1993-2014 (excludes canned, frozen, juice and dried)



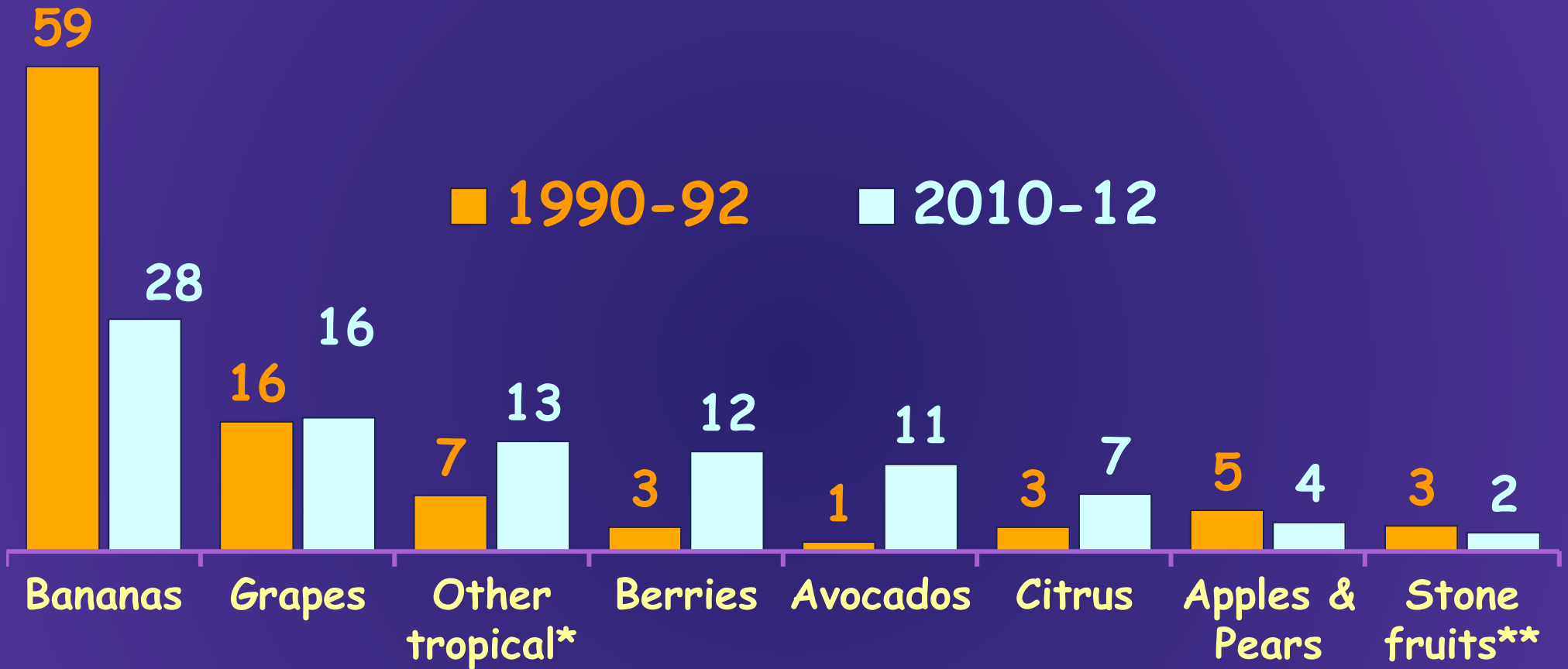
Source: USDA/FAS GATS.

Total US Fresh Produce Imports, by Key Category, \$Millions, 1994-2014, (all countries)



Source: USDA GATS online queries, BICO-10.

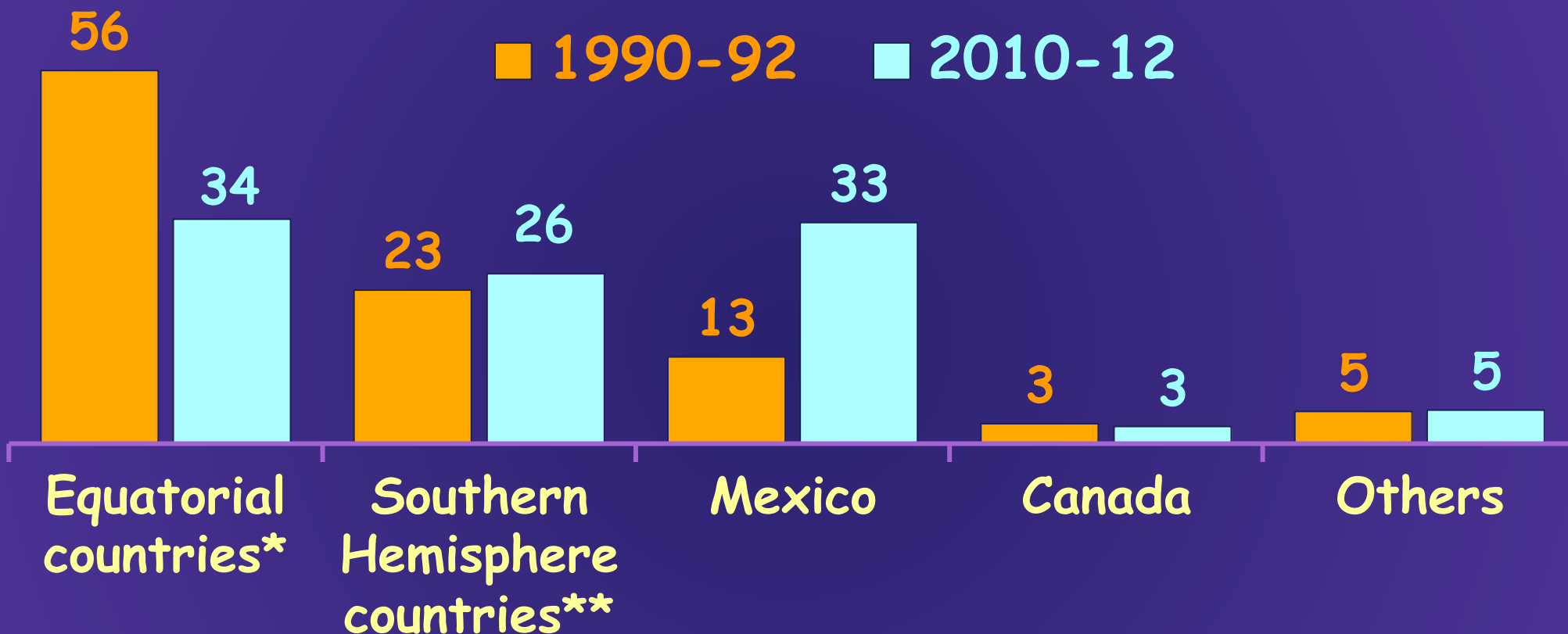
Value Shares of Total US Fresh Fruit Imports, by Product: Major Changes in Product Mix



* includes pineapples, mangos, papayas, durians

** includes apricots, cherries, peaches, plums

Value Shares of Total US Fresh Fruit Imports, by Region: Mexico Wins!



* Equatorial countries include Costa Rica, Guatemala, Ecuador, Colombia, and Honduras

** Southern Hemisphere countries include Chile, Argentina, Peru, New Zealand, Brazil, South Africa, and Australia

Fresh fruit and vegetable imports as a share of US fresh utilization/consumption, 2013/14* (despite rising imports most of US consumption is still produced here)

Item	%
Vegetables, excl. melons and potatoes	28
Melons	33
Potatoes	9
Fruit, all	52
Excluding Bananas	35

*2014 for vegetables and potatoes; 2013 for melons and fruit.

Source: Economic Research Service, USDA.

Mexican Fresh Produce Trade

- Mexico is a powerhouse fresh fruit and veg exporter and is an integral part of the North American fresh produce supply chain for many commodities.
- In 2013, Mexican fresh produce exports to the world totaled \$8.743 billion including:
 - \$4.9B fresh veg, plus
 - \$3.9B fresh fruit.
- To put this in context, the USA exported \$7.4 billion of fresh produce in 2013.
- Nogales is losing market share in Mexico's fresh produce exports as Texas crossings gain share!!

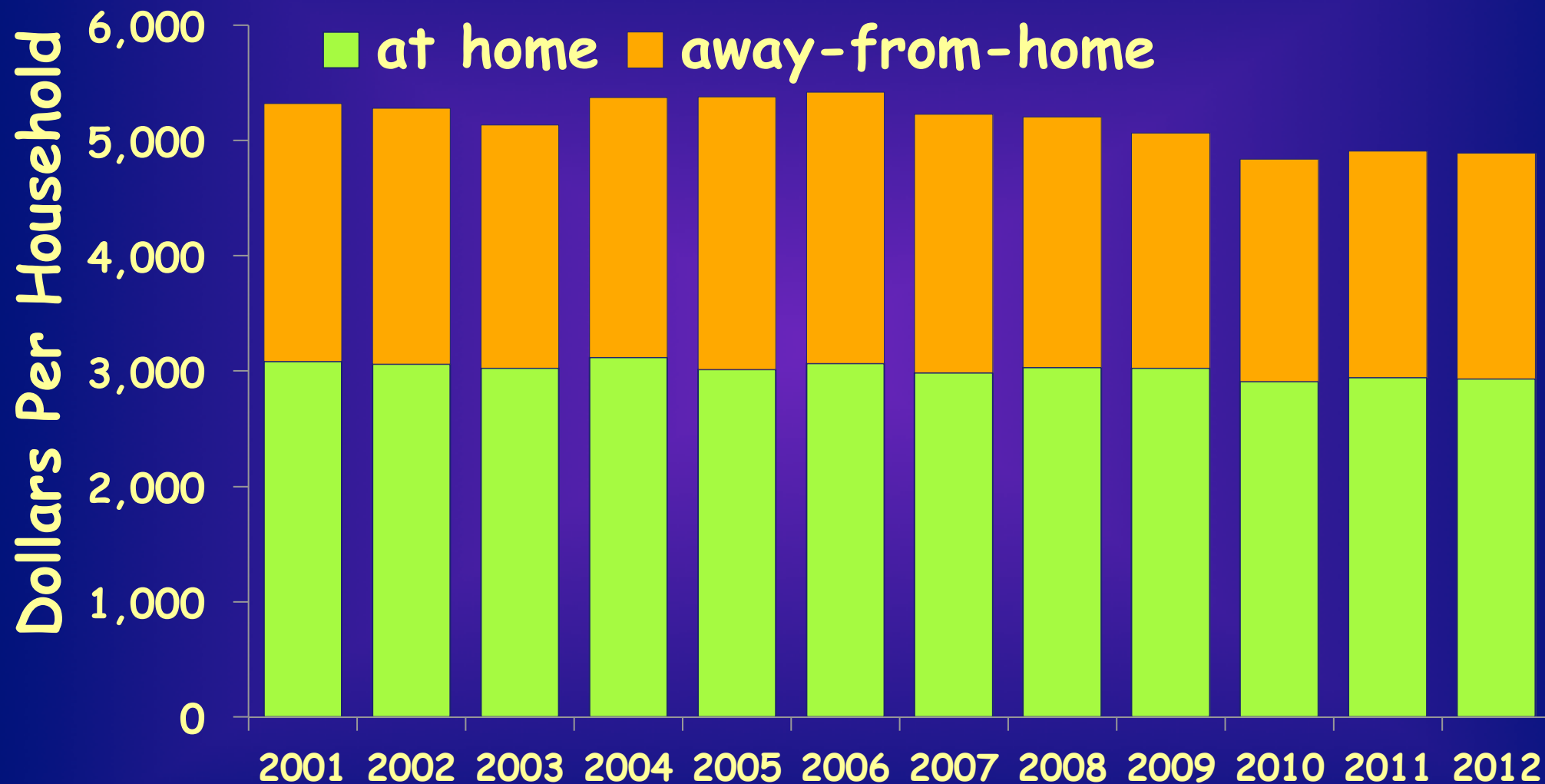
Shares of Total Mexican Exports of Fresh Produce by Key Country of Destination: Mexico has not succeeded in market diversification

<u>Product</u>	<u>2003</u>	<u>2013</u>
Fruit		
% US & Canada	86	92
% Other	14	8
Vegetables		
% US & Canada	99	99
% Other	1	1

Source: Calculated by Cook based on SIAVI database from Secretaria de Economia, Mexico, 2014.

The Economic Downturn and its Effect on Food and Fresh Produce Retailing

US Average Annual Household Food Spending in Constant (2001) Dollars, by At Home and Away-From-Home, 2001-2012



Sources: Demographics of Consumer Spending 2013 Edition, The Food Institute; and Food Industry Review 2014, The Food Institute. Deflated by Cook.

The Economic Downturn and Consumer Food Behavior

- 2009, the quantity of food sold in food stores down.
- “I buy only what I need.” Waste a concern.
- Perception that produce costs more and may be wasted. Better shelf-life might help.
- 46.5 million people on food stamps (SNAP) in FY2014 (vs 17.3 in 2000) for cost of \$73.9B.
- Consumption rates of fresh produce increase markedly with income level so more robust economic growth will help demand for fresh produce.
- Higher income and socially conscious foodies are driving demand; their preferences lean to organic, “natural,” convenience (fresh-cut), flavor, local.

USA Select Supermarket* Fresh Produce Dept. Performance During the Economic Downturn/Recovery, % Change v. Prior Yr

*As of 2013, includes Walmart Supercenters, Sam's Club and Target.



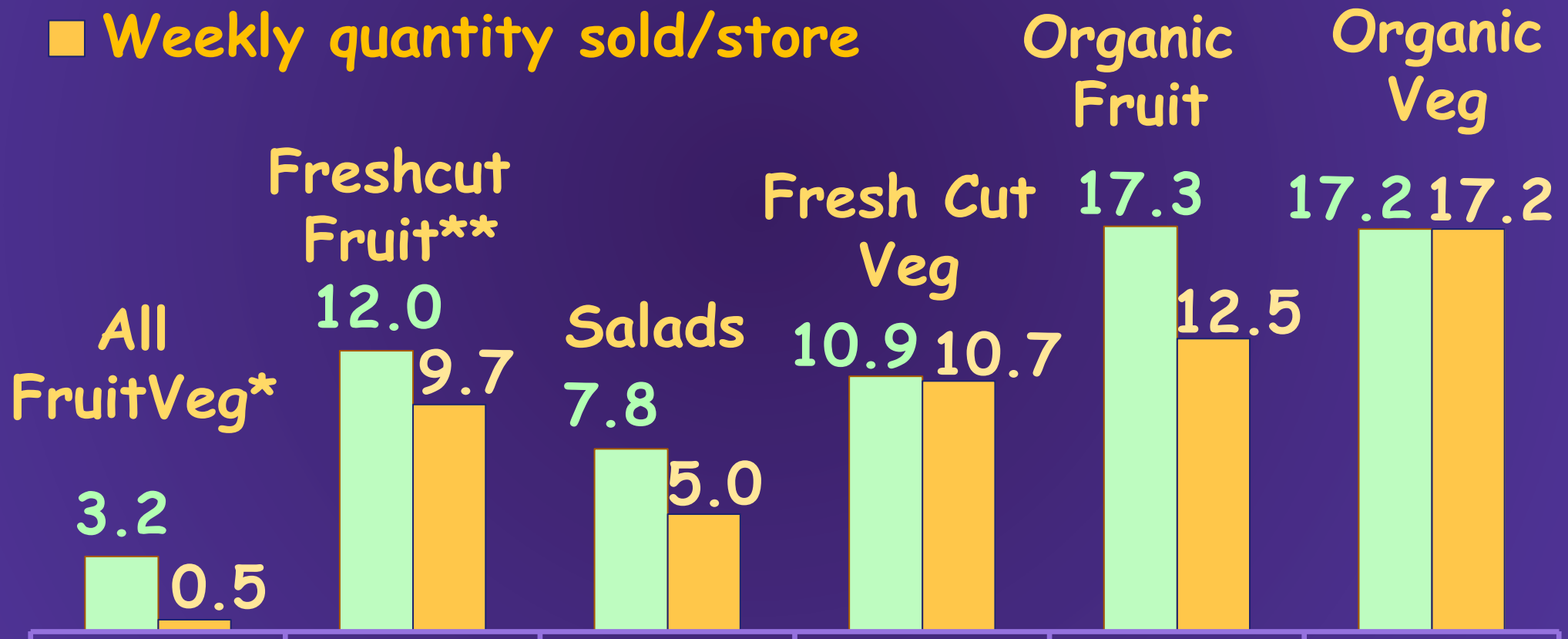
Sources: Various sources of scanner data.

Note: Not same store sales and the store universes change over time so exercise caution when making annual comparisons.

Fresh-cut, Organic and Total Fresh Fruit and Vegetable Sales in Key US Food Retailers, % Change 2014 vs 2013

■ Weekly \$ sales/store

■ Weekly quantity sold/store



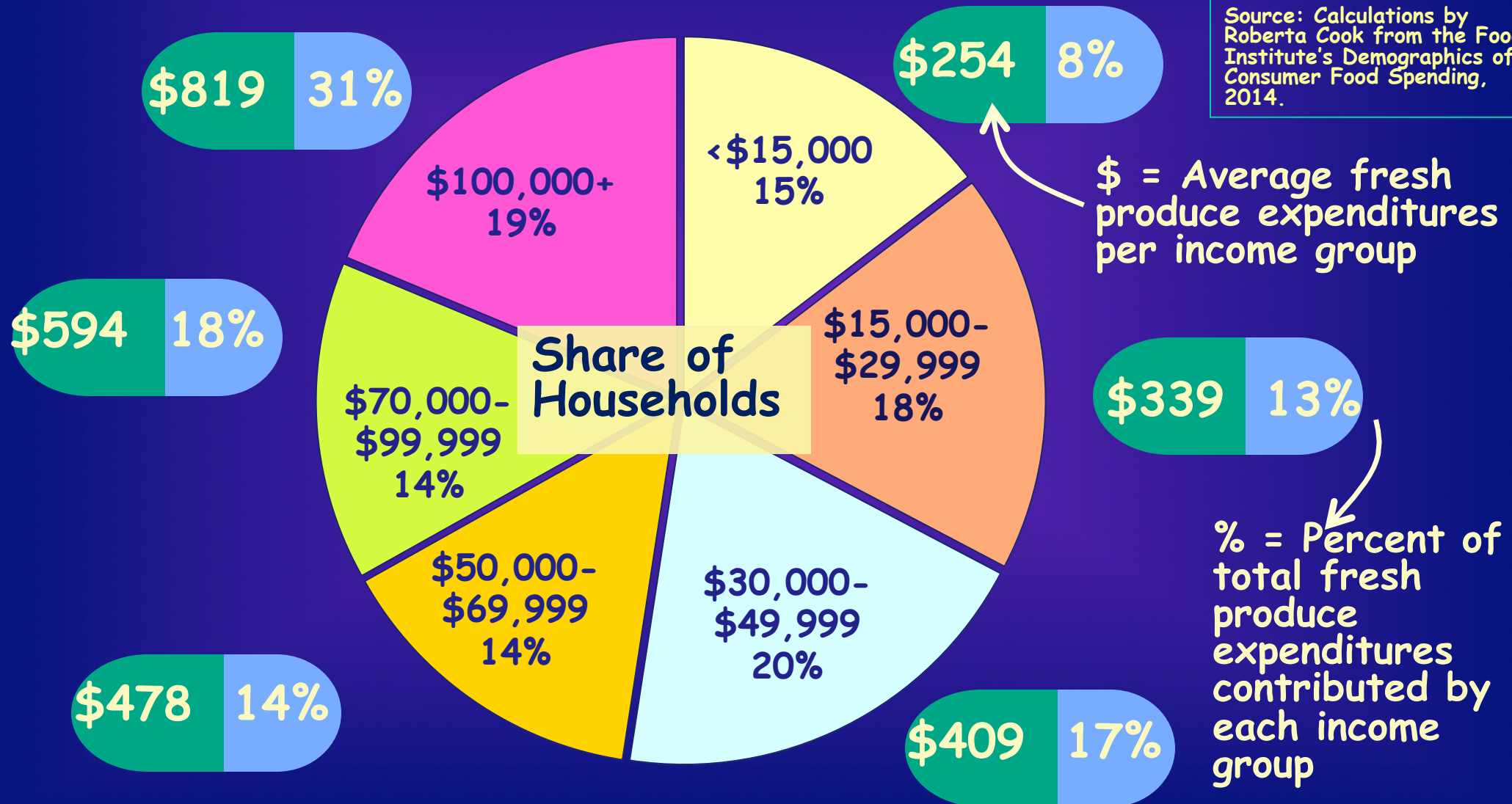
*Excludes other produce (such as salad dressings, toppings, etc.), which is 10% of produce dept sales dollars and 5% of quantity.

** Excludes overwrap.

Source: FreshFacts® on Retail, Whole and Fresh Cut Produce Trends: 2014, United Fresh Produce Association and Nielsen, March 2015. Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. It includes UPC, random weight and retailer assigned codes.

Distribution of US Households by Income Level, Share of Total Fresh Produce Expenditures/Income Level & Ave. Fresh Produce Expenditures/Income Level, 2012

Source: Calculations by Roberta Cook from the Food Institute's Demographics of Consumer Food Spending, 2014.

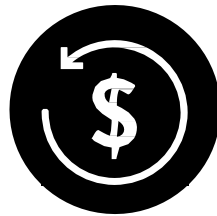


POWER SHOPPERS ARE PROFITABLE TO THE STORE:

Key fresh categories bring the most powerful shoppers to the store, 2013



POWER SHOPPERS



MOST PROFITABLE SHOPPERS



POWER SHOPPERS = TOP 33% OF SHOPPERS WHO OVER-INDEX IN SPEND and FREQUENCY DRIVE 59% OF STORE DOLLARS/YR

CATEGORIES MOST FREQUENTLY PURCHASED BY

POWER SHOPPERS

Carbonated Soft Drinks	Eggs
Salty Snacks	Canned Vegetables
Packaged Bread	Crackers
Bananas	Shelf Stable Juices & Drinks
Cheese	Tomatoes
Confections	Cream & Creamers
Refrigerated Juices & Drinks	Deli Bulk Meat
Yogurt	Packaged Salad
Cookies	Potatoes

Indicates Produce Categories

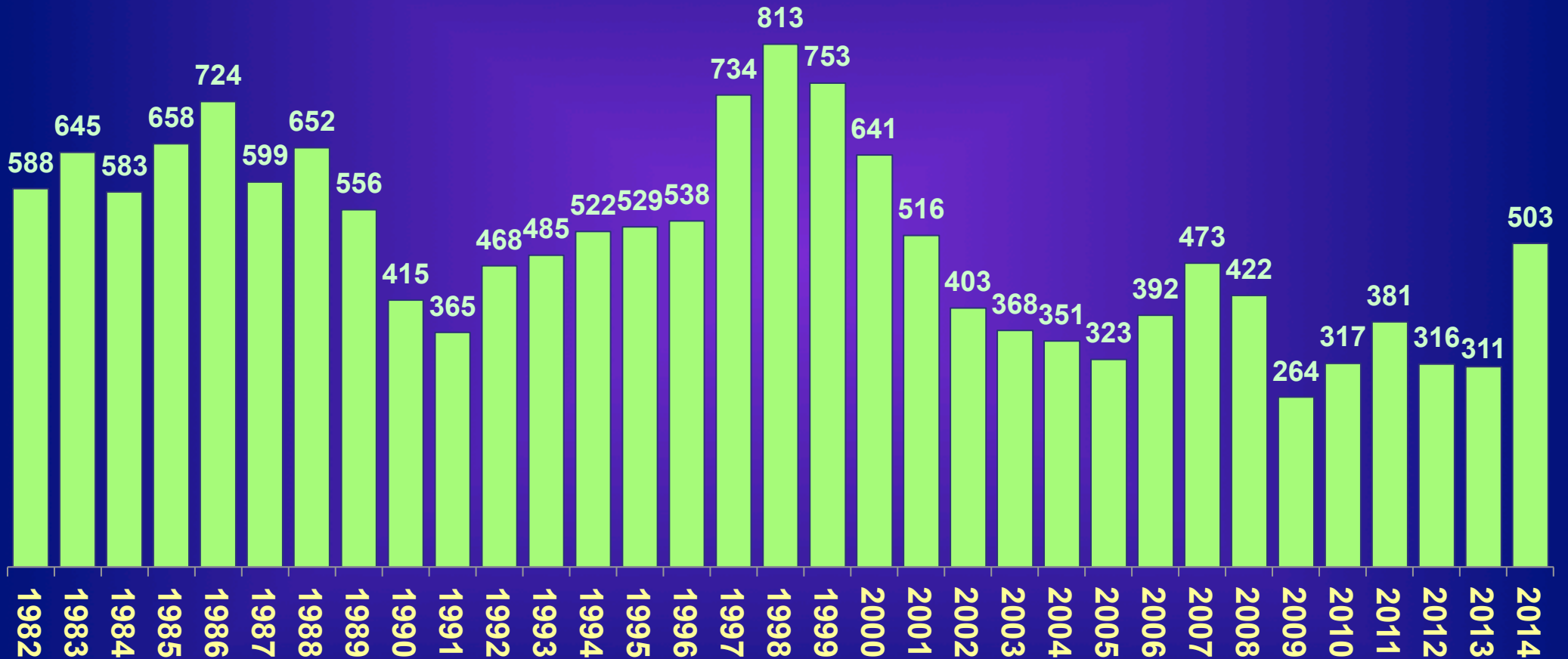
The good news

- Economic growth improving and the retail quantity sold of fresh produce grew 2% in 2014 - finally some growth!
- High fresh produce consumers are often “foodies” and interested in where and how products are grown and participate in social media. High knowledge and loyalty—if deliver flavor, unusual varieties, convenience.
- Opportunity for consumer engagement on premium varieties greater than ever.
- Foodservice industry under great pressure to add more non-animal protein to menus, offer more center plate produce options, increase the diversity of produce items; movement to stealth health. Tomatoes may have opportunities.

The economic downturn accelerates pace of change in the food marketing system

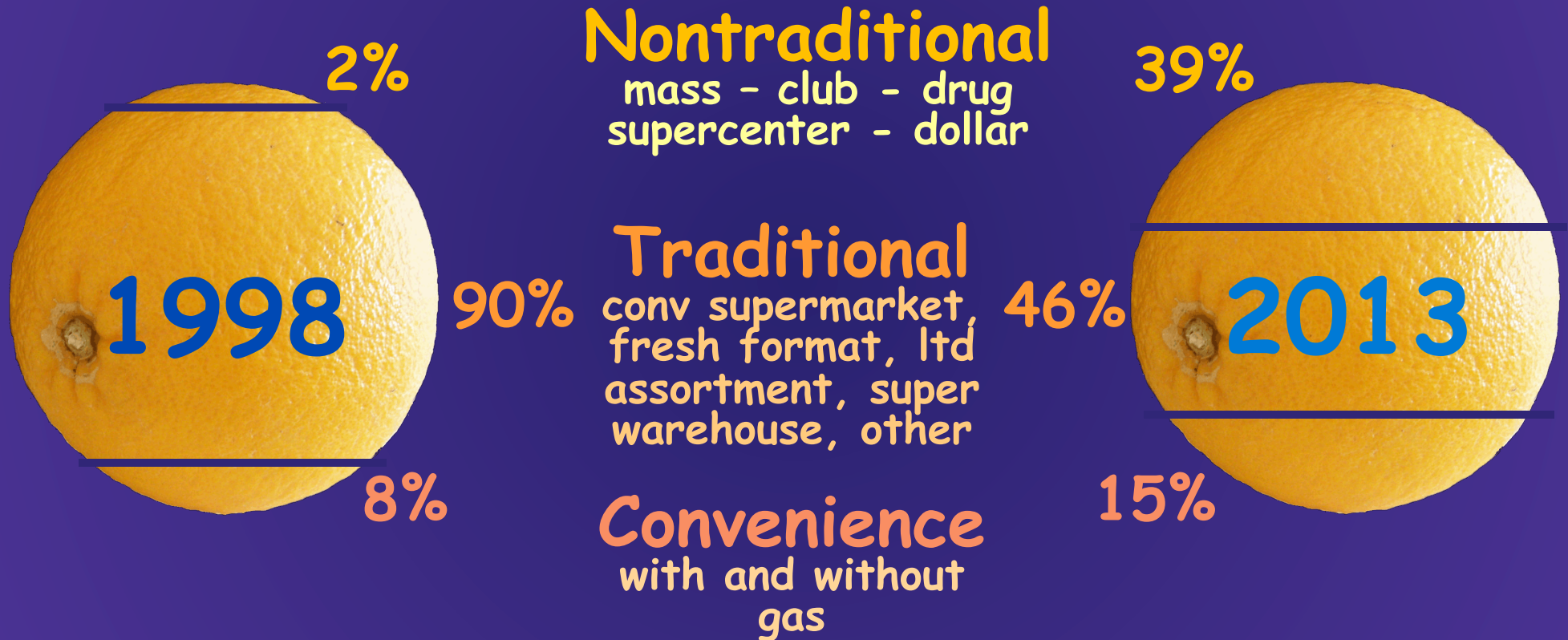
- More than originating new trends, it intensified pre-existing forces, such as channel blurring.
- Margin pressure at all levels of the food system!
- Many produce suppliers facing lower profits.
- Growing food safety, traceability and sustainability expectations all increase costs.
- Need for major investments in info tech systems.
- Foodservice took a huge hit.
- Mergers are up (retailers, foodservice, shippers).
- More than ever it is necessary for firms to differentiate, get out of commodity trap or not be caught in the deadly "middle."

US Food Industry Mergers & Acquisitions 1981-2014: Fewer, Larger Buyers!

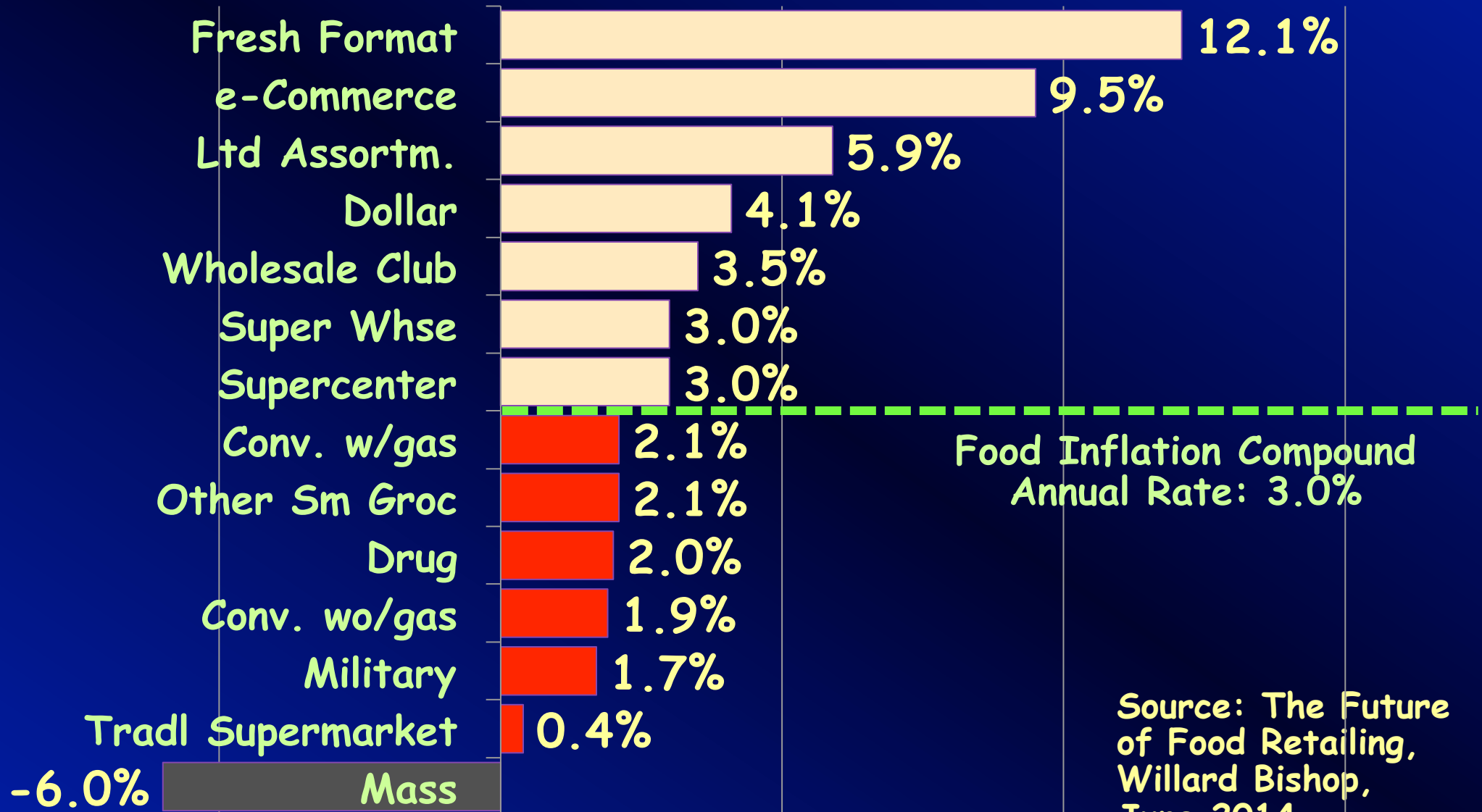


Sources: various Food Industry Reviews, including the 2014 Edition, The Food Institute; and The Food Institute Webinar *Who's Buying Whom and What to Expect in the Future*, March 3, 2015.

US Grocery Market Shares, by Key Channel, 1998 vs. 2013: Market Transformation!



Forecast of Compound Annual Sales Growth Rate vs. Inflation 2013-2018



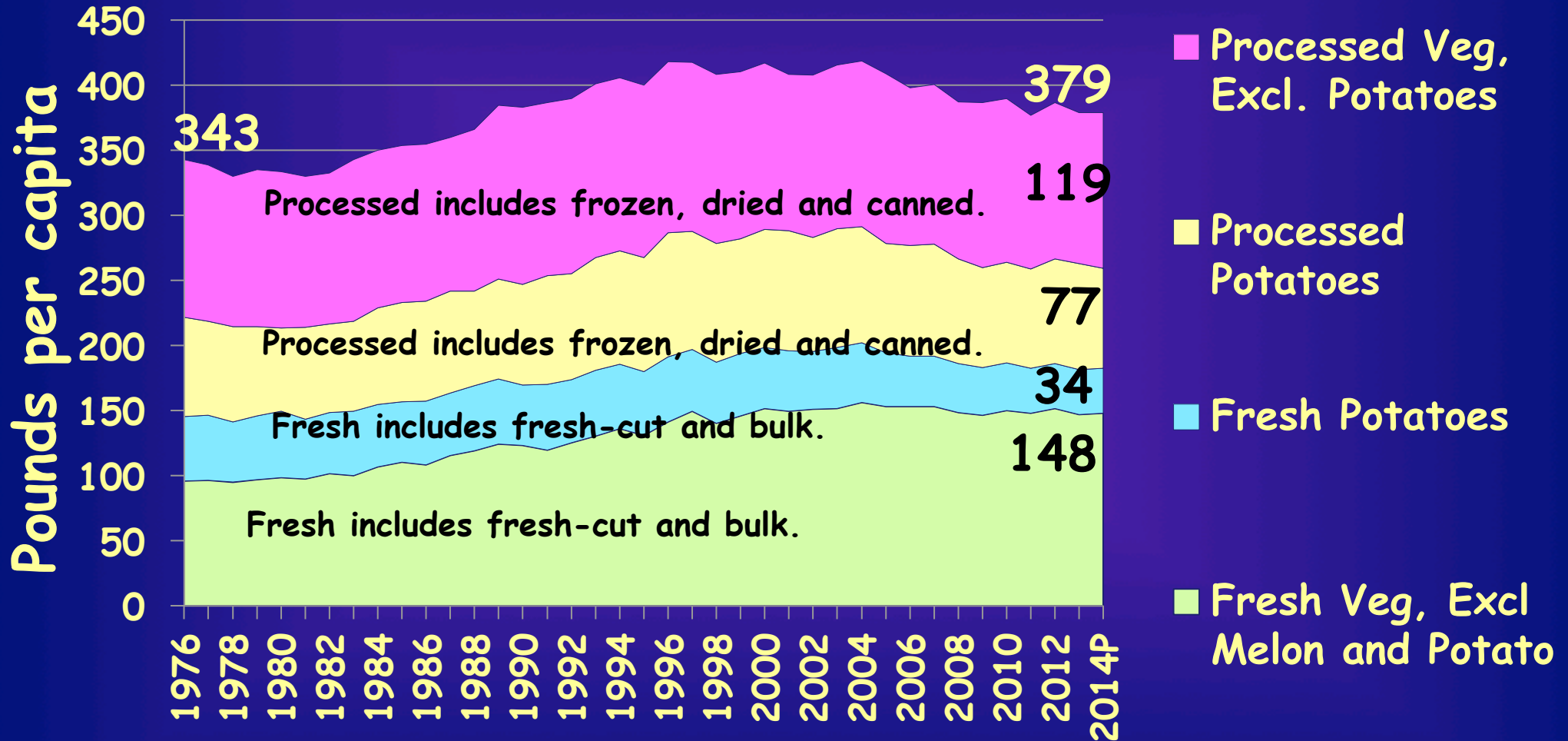
Source: The Future of Food Retailing, Willard Bishop, June 2014

Emerging marketing channels for fresh produce

- Convenience store potential, drug stores, \$ stores.
- E-commerce. Click 'n collect, delivery, in-store pickup, various models emerging, Amazon Fresh.
- Major initiative to increase fresh produce on foodservice menus despite the barriers.
- Growing international trade provides more redundancy in supply which may help large foodservice users to add produce items to the menu.
- \$27B fast casual segment (about 12% of limited service sales) very focused on fresh and creative ingredients; potential for hothouse tomatoes.

Fresh Tomato Market Supply and Consumption

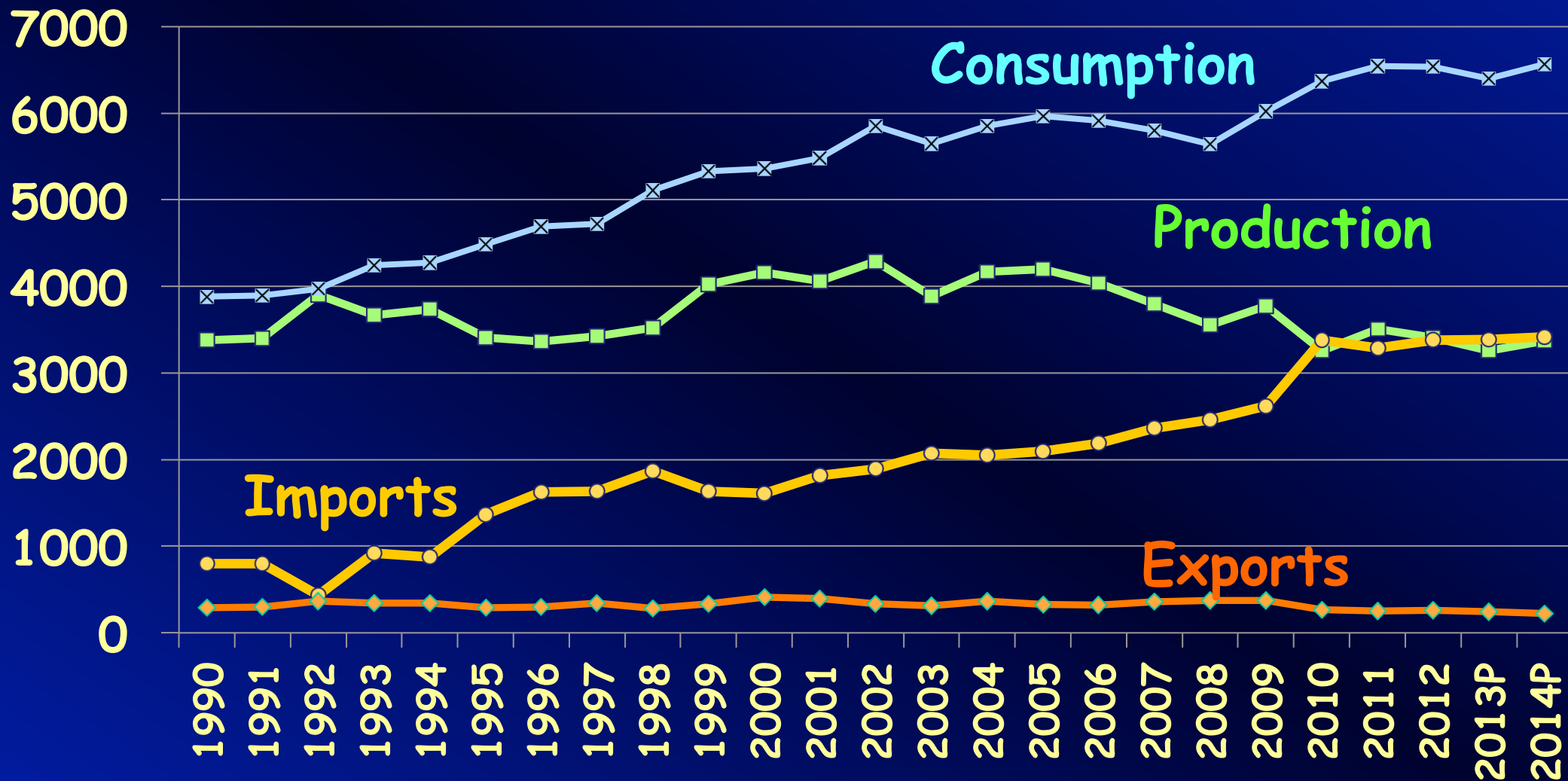
U.S. Per Capita Vegetable Utilization/Consumption, Excluding Melons, 1976-2014^P, (all channels, foodservice and retail, includes freshcut), pounds



Sources: USDA/ERS, Vegetables and Melons Situation and Outlook Yearbook, May 30, 2014 through 2007; and for 2008-2014 USDA/ERS, Vegetables and Pulses Yearbook Tables, posted online March 20, 2015. Figures compiled by Dr. Roberta Cook, UC Davis, fresh and processed sweet potato share of total sweet potatoes is estimated; processed vegetables includes lentils and dry peas, and excludes dry beans.

US Fresh Tomato Production, Consumption, Imports, and Exports, 1990-2014^P (includes hothouse)

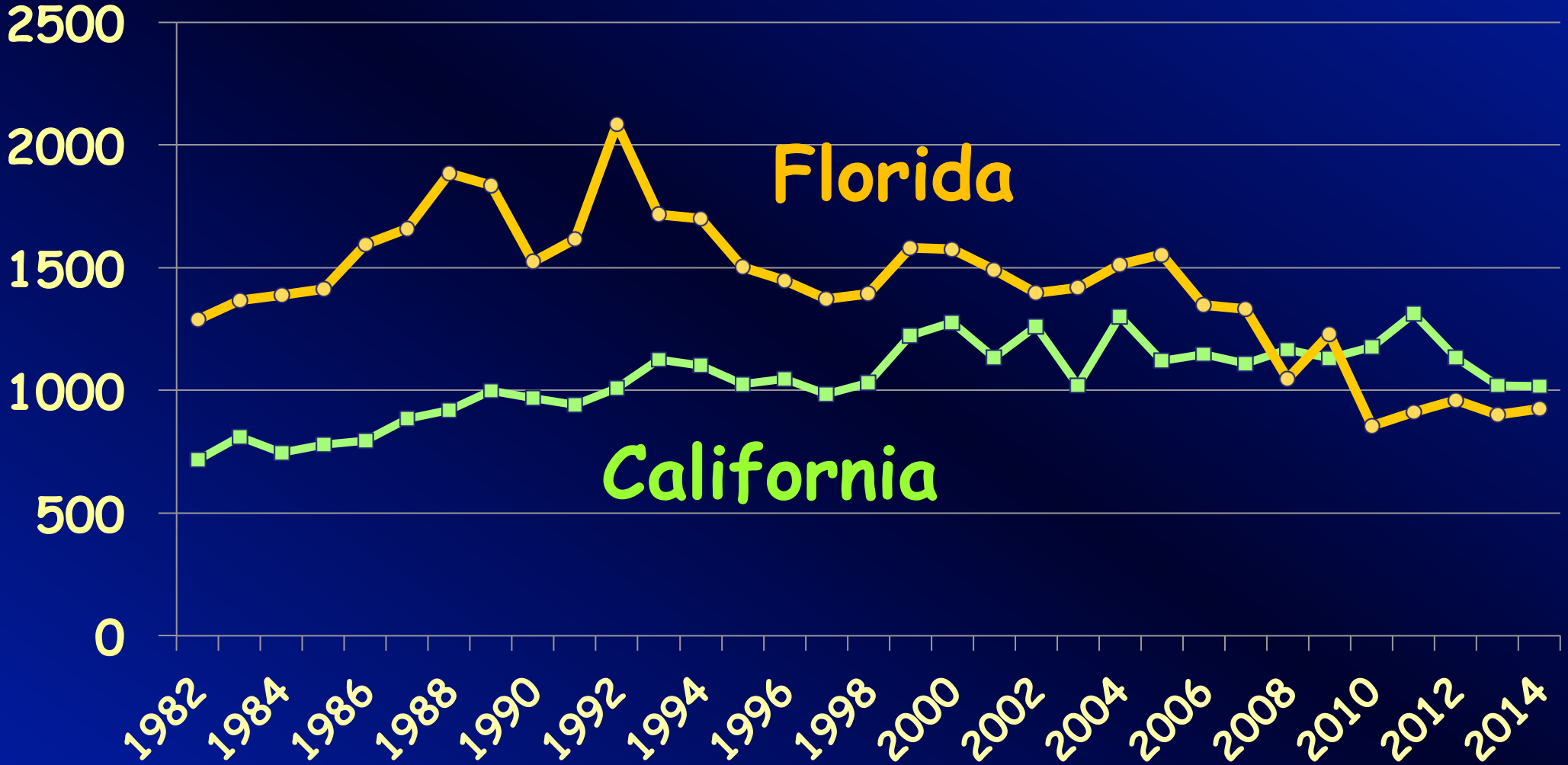
million pounds



Source: USDA/ERS, Vegetables and Pulses Yearbook Tables, posted online March 20, 2015, <http://www.ers.usda.gov/data-products/vegetables-and-pulses-data/yearbook-tables.aspx>.

US Fresh (not processed) Field Tomato Production, California and Florida only, (excludes other states and greenhouse) 1982-2014

million pounds



US Fresh Tomato Imports from Mexico, in Value and Volume, 1991-93 vs. 2008-10, and 2012-14

Crop 2012-14	Value (million dollars)			Volume (thousand metric tons)		
	1991-93	2008-10	2012-14	1991-93	2008-10	2012-14
Tomatoes	229	1,252	1,624	312	1,138	1,383

Between 1991-93 and 2012-14, value grew 609% vs 343% for volume. By the mid-90's, growers in Sinaloa had switched to new higher value long shelf-life varieties. This increased US import demand. Growers have continued to improve quality and many have transitioned to hothouse production. New hothouse producers in central Mexico have also contributed to the export of premium, high value tomatoes.

Sources: USDA/ERS Outlook, "NAFTA at 17", March 2011, and USDA/GATS trade data for 2012-14, compiled by Cook.

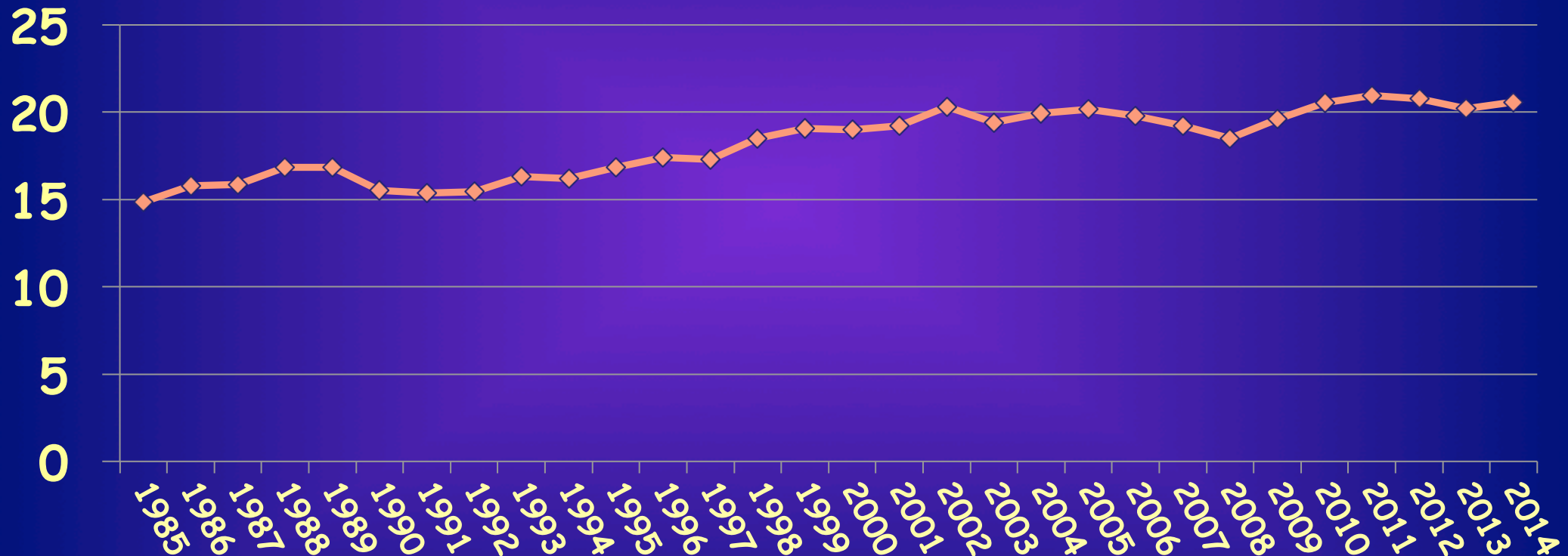
Monthly FOB Prices for US Mature Green Fresh Tomatoes, January-August, 2008-2012 (low 2012 prices likely led to trade dispute)

US cents/pound



US Per Capita Utilization/Consumption of Fresh Tomatoes (1985-2014^P)

Pounds per capita



P=Preliminary

Source: USDA/ERS, Vegetables and Pulses Yearbook Tables, posted online March 20, 2015, <http://www.ers.usda.gov/data-products/vegetables-and-pulses-data/yearbook-tables.aspx>.

Fresh Tomato Types Proliferate as Firms Pursue Product Differentiation in a Mature Market

Field-grown only

Mature green round tomatoes (harvested at stage 2 of 6)

Vine-ripe round tomatoes (harvested at later stages)

Tomatillos (green husked tomatoes)

Protected culture only

Beefsteak/round tomatoes with calyx

Tomatoes-on-the-vine (TOV)

Campari (small snacking tomato on the vine)

Both field-grown and protected culture

Grape tomatoes (snacking)

Romas

Cherry (snacking)

Heirloom

Other specialty (some of which are snacking)

Specialty and Greenhouse Tomatoes

Y.E.L.O. Youth, Energy, Life, Om...™



Specialty and Greenhouse Tomatoes

US Fresh Tomato Trends

- Over half of the quantity of tomatoes sold in the USA are estimated to be sold in foodservice channels. Foodservice relies on round, field-grown mature green tomatoes, preferred for their firmness and slicing characteristics.
- Foodservice sales took a big hit during the economic downturn, reducing sales of mature greens. Foodservice sales are now rebounding; this in turn should increase sales of mature greens.
- Hothouse tomatoes are just now starting to make some inroads in foodservice channels (not fast food).
- Remember - retail scanner data excludes foodservice tomatoes! So, scanner data only reflect trends in about half of the total tomato market. There is no data on fresh tomato sales in foodservice channels.

US Retail Fresh Tomato Trends and Caveats in Interpreting Scanner Data

- Retail scanner data sets are not directly comparable, year to year (stores may enter and exist the sample universe).
- As noted earlier, scanner data doesn't indicate whether certain tomato types are grown in PC or not, so HH vs field tomato shares are not definite; and firms purchasing scanner data may ask Nielsen or IRI for different product hierarchies creating different views of the tomato category.
- Nielsen and IRI report two general HH subcategories: TOVs and beefsteak/rounds - so we know these are definitely HH.
- Many romas exported from Mexico are HH (although not reported as such), and while snacking tomatoes, such as grapes, can be either field-grown or HH, increasingly they are HH.

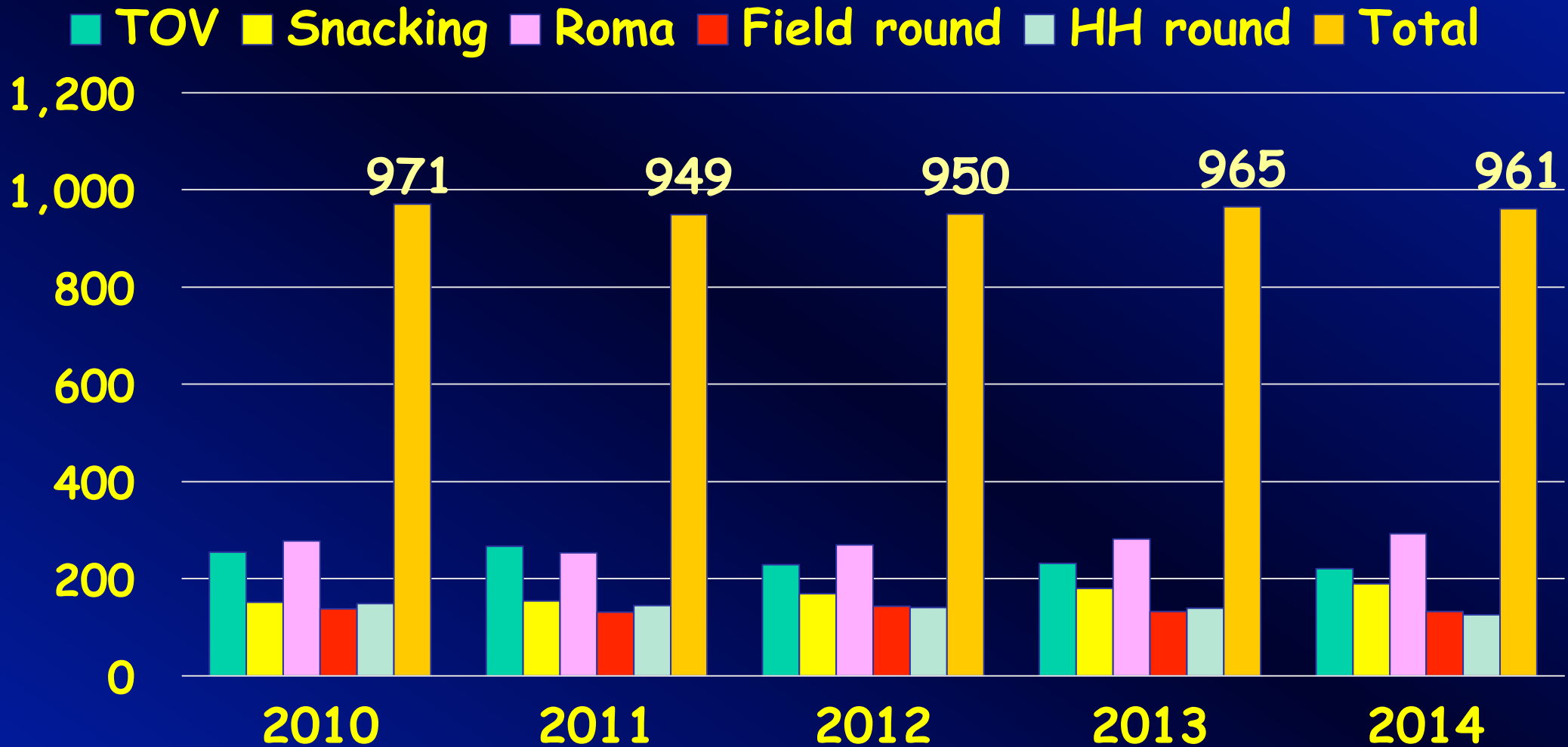
US Retail Fresh Tomato Trends and Caveats in Interpreting Scanner Data

- Given these limitations we can determine the minimum share of retail tomatoes sold which are HH, but not the maximum. Based on the following Perishables Group Nielsen data, combined HH round and TOVs represent 36% and 39% of total tomato category quantity and dollar sales, respectively.
- After accounting for estimated sales of roma and snacking tomatoes grown in HHs (but not identified as HH), the HH shares should be over half of total tomato category quantity and dollar sales.

US Retail Fresh Tomato Trends and Caveats in Interpreting Scanner Data

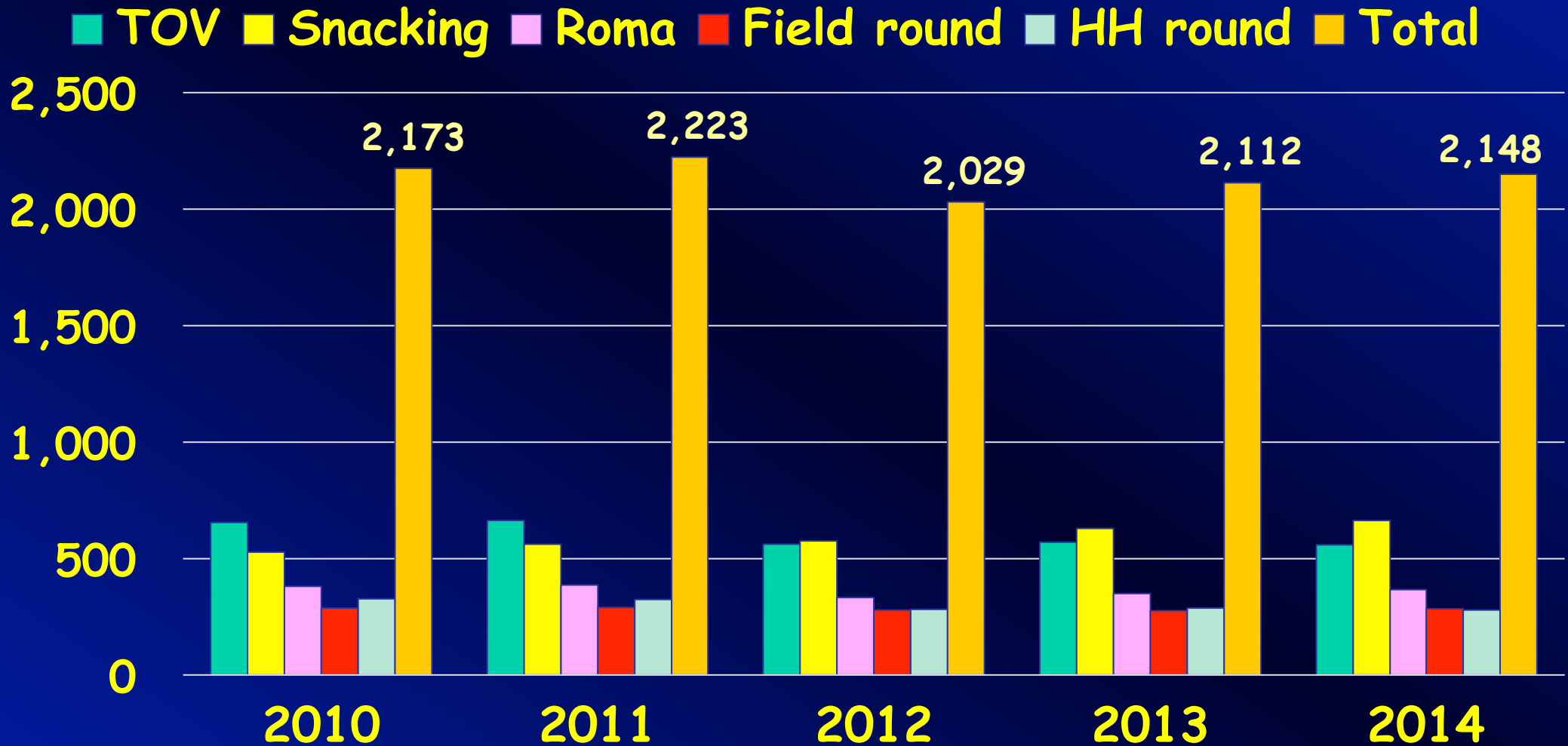
- The tomato category was stagnant between 2010-14 but with a major change in product mix. The growing subcategory is the small, convenient snacking tomato, which cannibalizes other tomatoes, both HH and field, rather than stimulating growth in total tomato sales and volume.
- In quantity sold, TOVs peaked in 2011 and HH rounds in 2010.
- In 2014, the category was up 1.7% in dollars and down .4% in quantity sold, with both snacking and romas gaining.

US Fresh Tomato Quantity Sold in Key Retailers, by Key Tomato Type, 2010-2014, Million Pounds



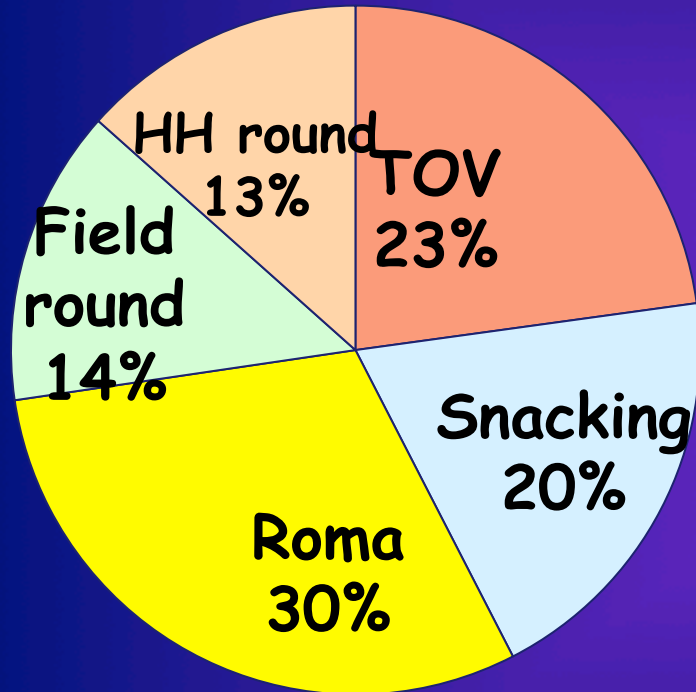
Source: Nielsen Perishables Group FreshFacts®, Historical 2010-2014

US Fresh Tomato Quantity Sold in Key Retailers, by Key Tomato Type, 2010-2014, Million Dollars

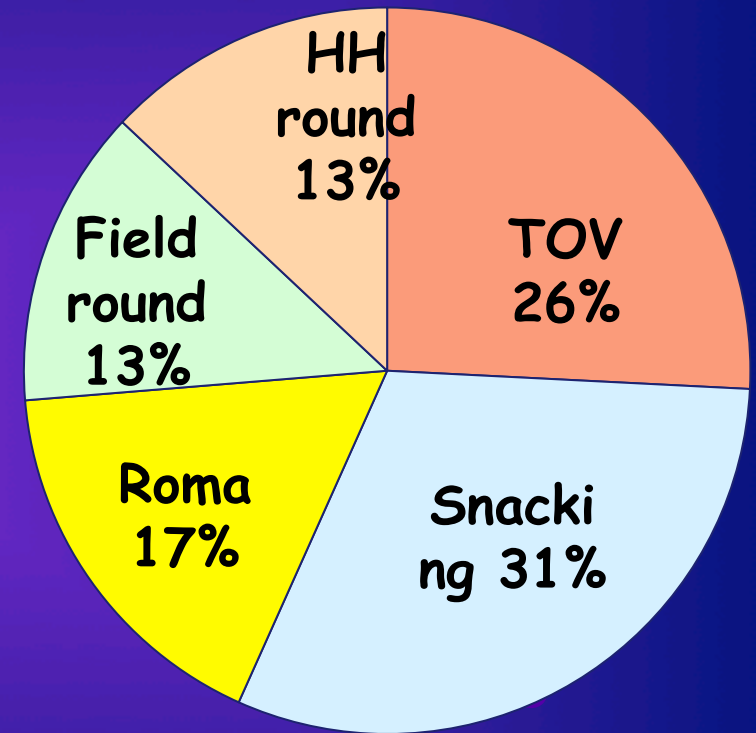


Source: Nielsen Perishables Group FreshFacts®, Historical 2010-2014

US Fresh Tomato Category Sales in Key Retailers: Shares in Quantity and Dollars, by Key Tomato Type, 2014



Quantity



Dollars

Source: Nielsen Perishables Group FreshFacts®, Historical 2010-2014. Fresh Coverage Area (FCA) incl key retailers from food, mass/supercenter and club chains, or more than 18,000 stores. It includes UPC, random weight and retailer assigned codes.

Big Picture

- Note that field-grown round tomatoes can be either mature greens or vine-ripes. Hence, the mature green shares of the tomato category are even lower than the field round shares of 14% of quantity and 13% of dollar sales shown in the prior slide.
- 2013 IRI scanner data reported that only 1/3 of the round field tomato quantity sold were mature greens (remainder vine-ripes). This highlights the dramatic loss in retail market share for mature greens over the last 2 decades in the wake of hothouse expansion.

Big Picture

- The mature green tomato industry, having lost most of its retail market, is now facing potential future competition in some segments of the domain it has owned, foodservice (fast casual and full-service rather than large fast food chains).
- Snacking tomatoes have growth potential in all segments of foodservice. This benefits HH more than field-grown.
- Facing a saturated retail market, HH producers have an incentive to get the right varieties of round tomatoes for foodservice. Breeders may or may not deliver in the near-to mid-term and cost relative to field-grown is a major barrier. But already there are examples of regional chains which emphasize “local” and premium ingredients, and seek supply and price stability, that are experimenting with HH.

Update on US Fresh Tomato Imports

Important Considerations

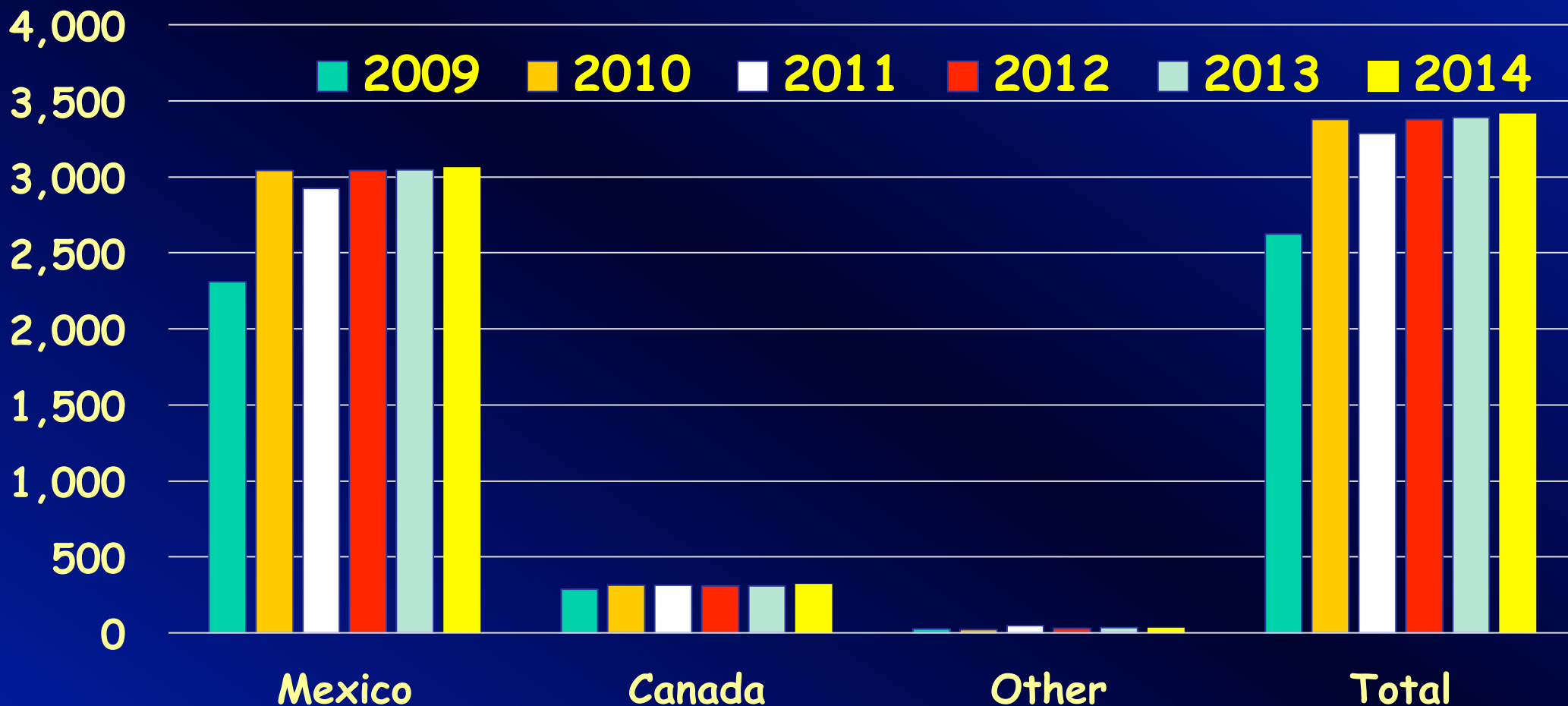
- Comparing trends DOES NOT necessarily imply causality - concept of with and without analysis.
- Too soon to draw conclusions about the impact of the higher minimum prices under the new suspension agreement with Mexico (in effect since March 2013).
- Minimum border prices may restrict supply and lead to higher prices (due to relatively inelastic demand).
- Higher prices may be difficult to sustain without acreage controls due to “supply response” dynamics.
- For now, Mexican tomato exports have stabilized in both quantity and value and the higher suspension prices have not caused a decline in imports.
- There has been a major change in the product mix imported from Mexico in recent years. This trend had been in effect for years and was not caused by the higher suspension prices.

Important Considerations

- It is likely that the higher suspension prices have improved market orderliness and reduced open loads.
- The reality is that fresh produce markets can only absorb a relatively fixed volume of a commodity per week. Demand is inelastic and retailers plan their promotions and marketing programs months in advance. Most are not equipped to suddenly move a lot more volume when weather causes higher weekly production volumes. Foodservice demand is even more inelastic.
- Higher suspension prices have likely caused some growers to limit expansion plans and given a wakeup call to Mexican growers about the volume that the US market can absorb profitably.
- A detailed look at US fresh tomato import trends follows.

US Fresh Tomato Imports, All Types, by Key Country, 2009-2014 (million pounds)

Millions

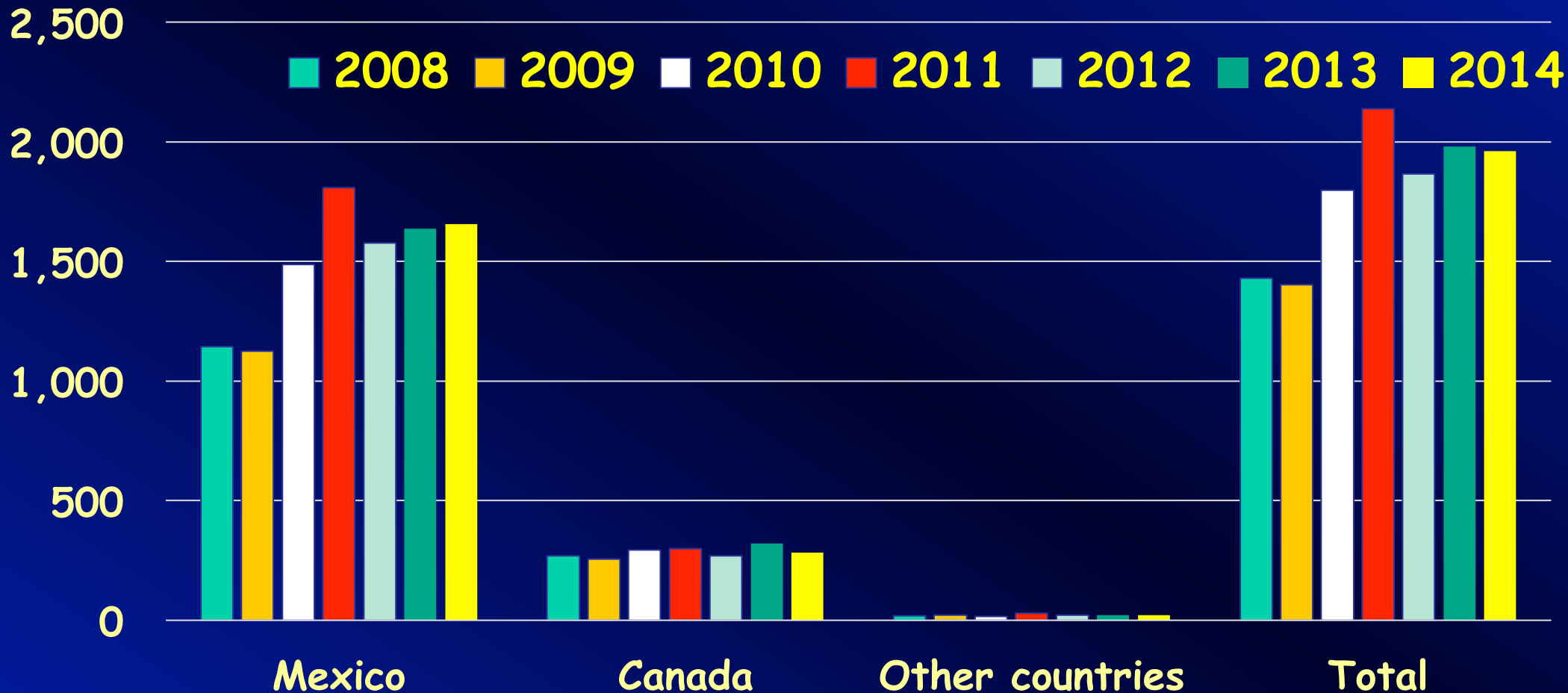


Source: US Department of Commerce, GATS online queries, FAS/USDA website.

US Fresh Tomato Imports, All Types, by Key Country, 2008-2014, (million dollars)

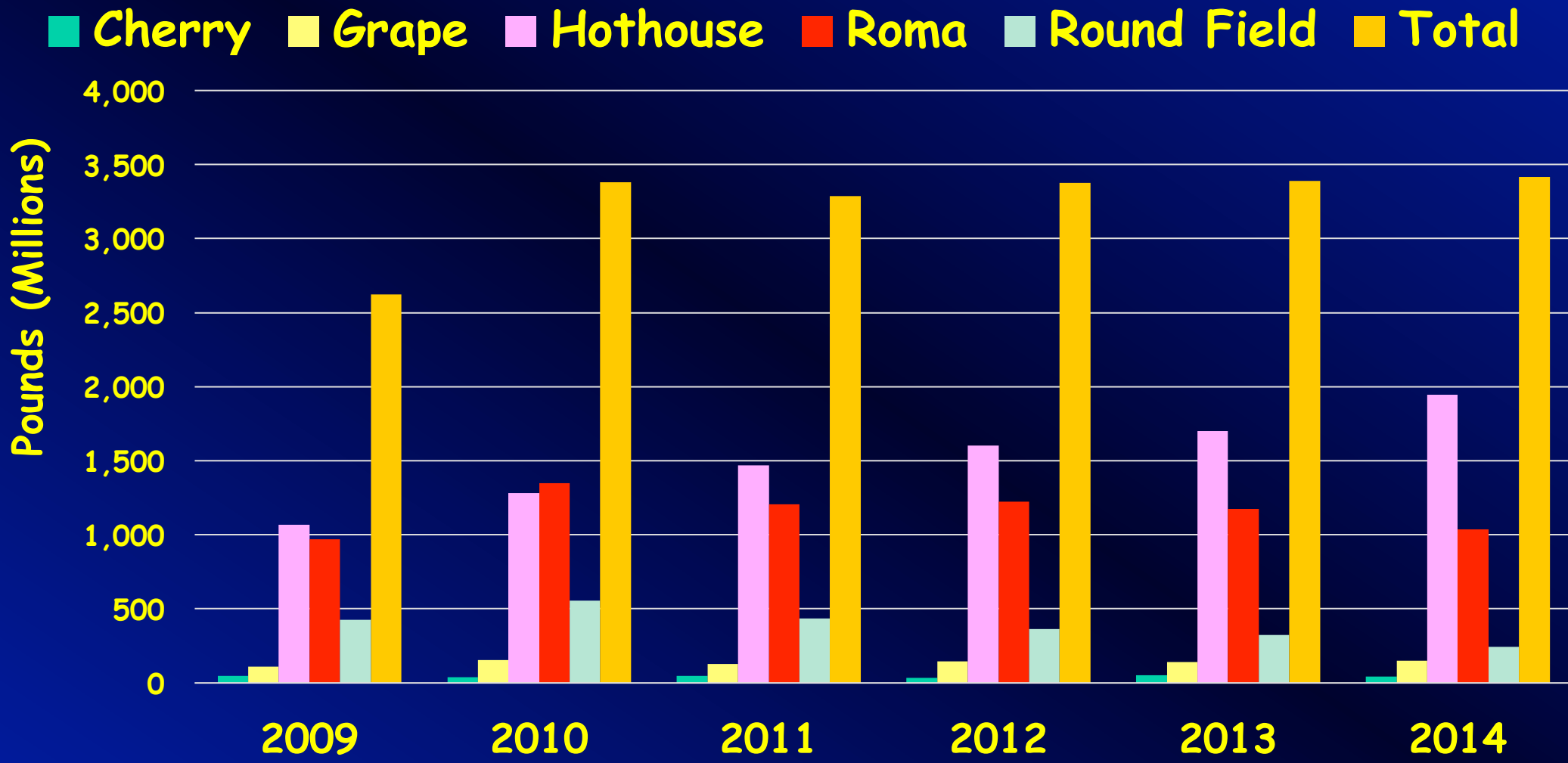
Million dollars

Note that in 2011 there was a major freeze in Sinaloa.



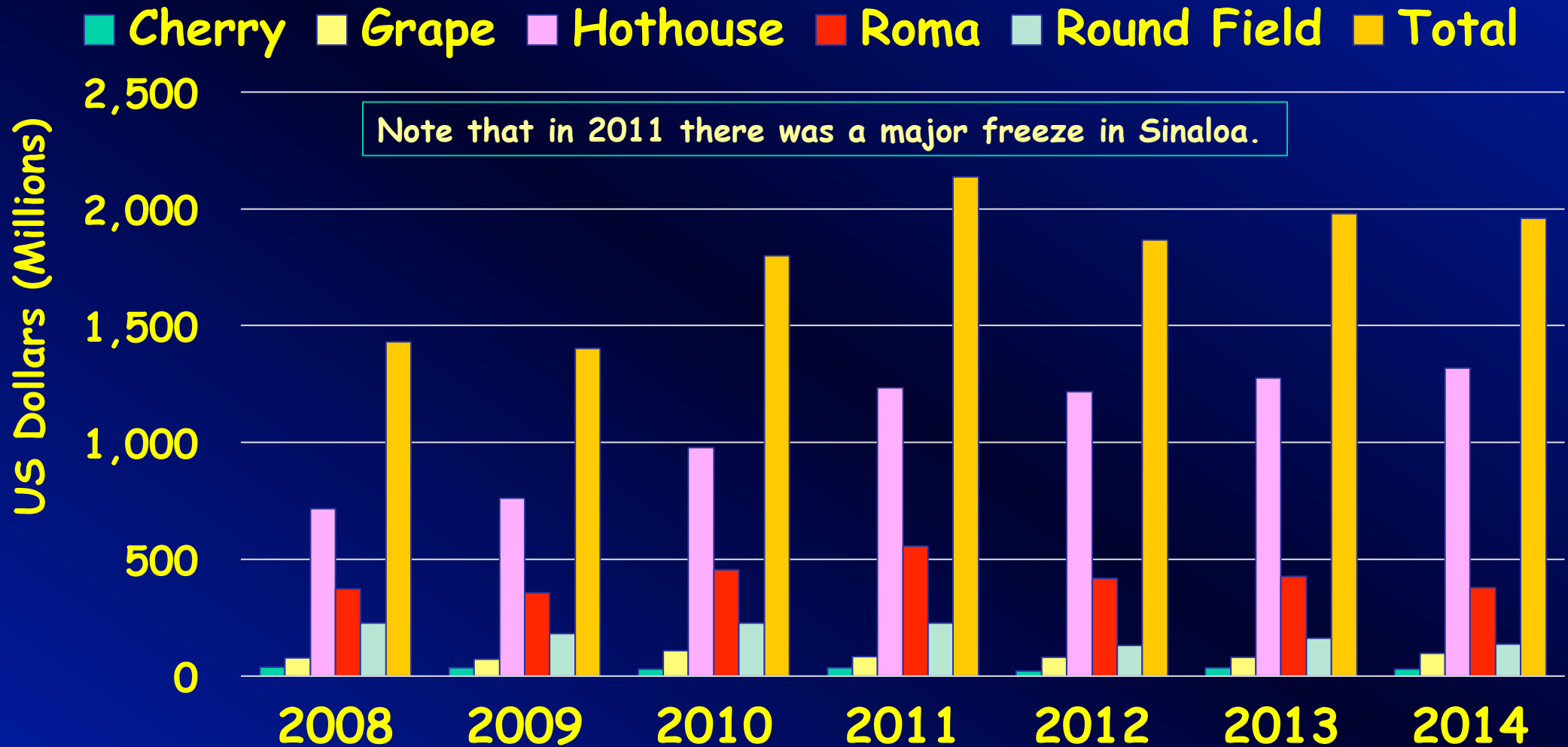
Source: US Department of Commerce, GATS online queries, FAS/USDA website.

Total US Fresh Tomato Imports, by Key Tomato Type, All Countries, 2009-2014 (millions of pounds)



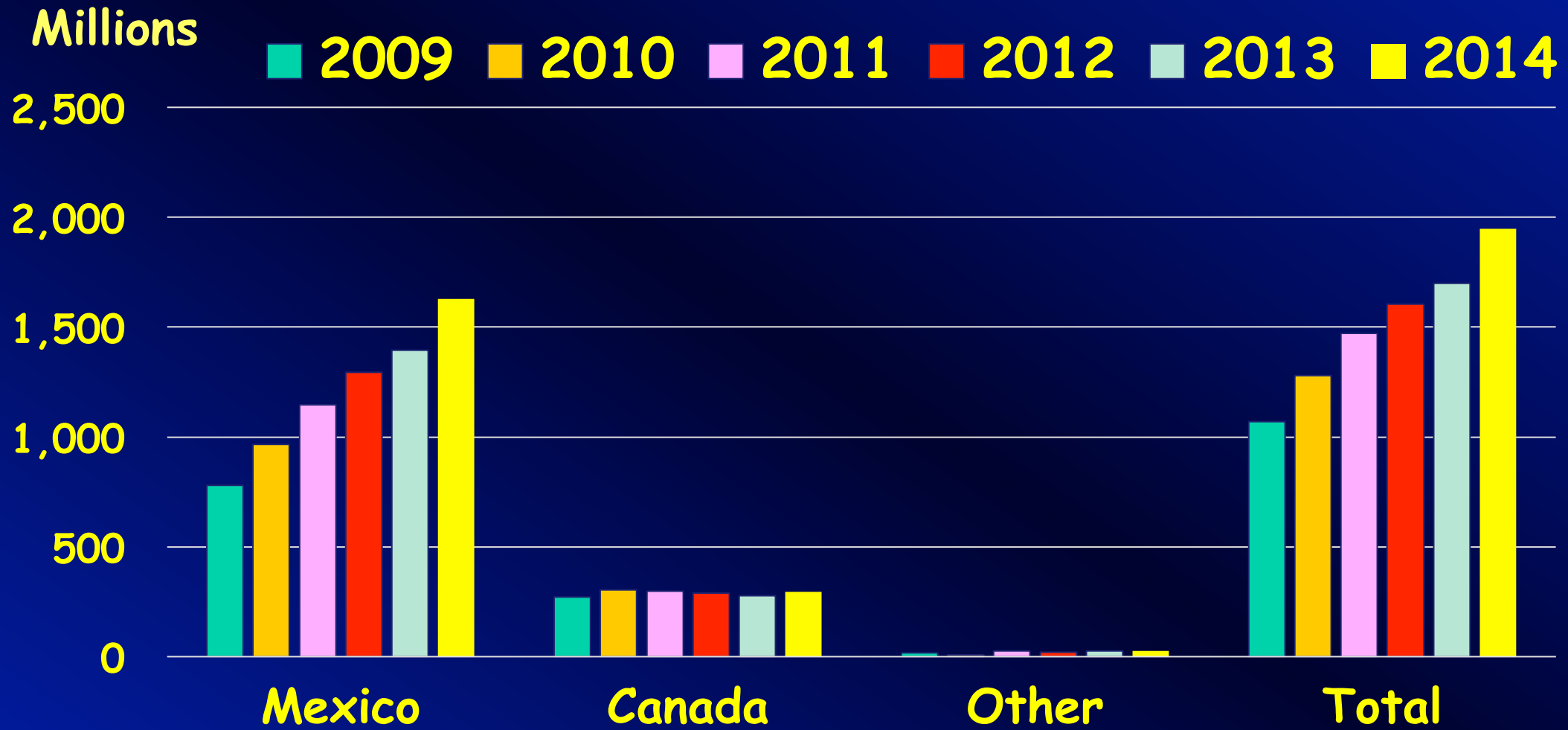
Source: US Department of Commerce, GATS online queries, FAS/USDA website.

Total US Fresh Tomato Imports, by Key Tomato Type, All Countries, 2008-2014, (million dollars)



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

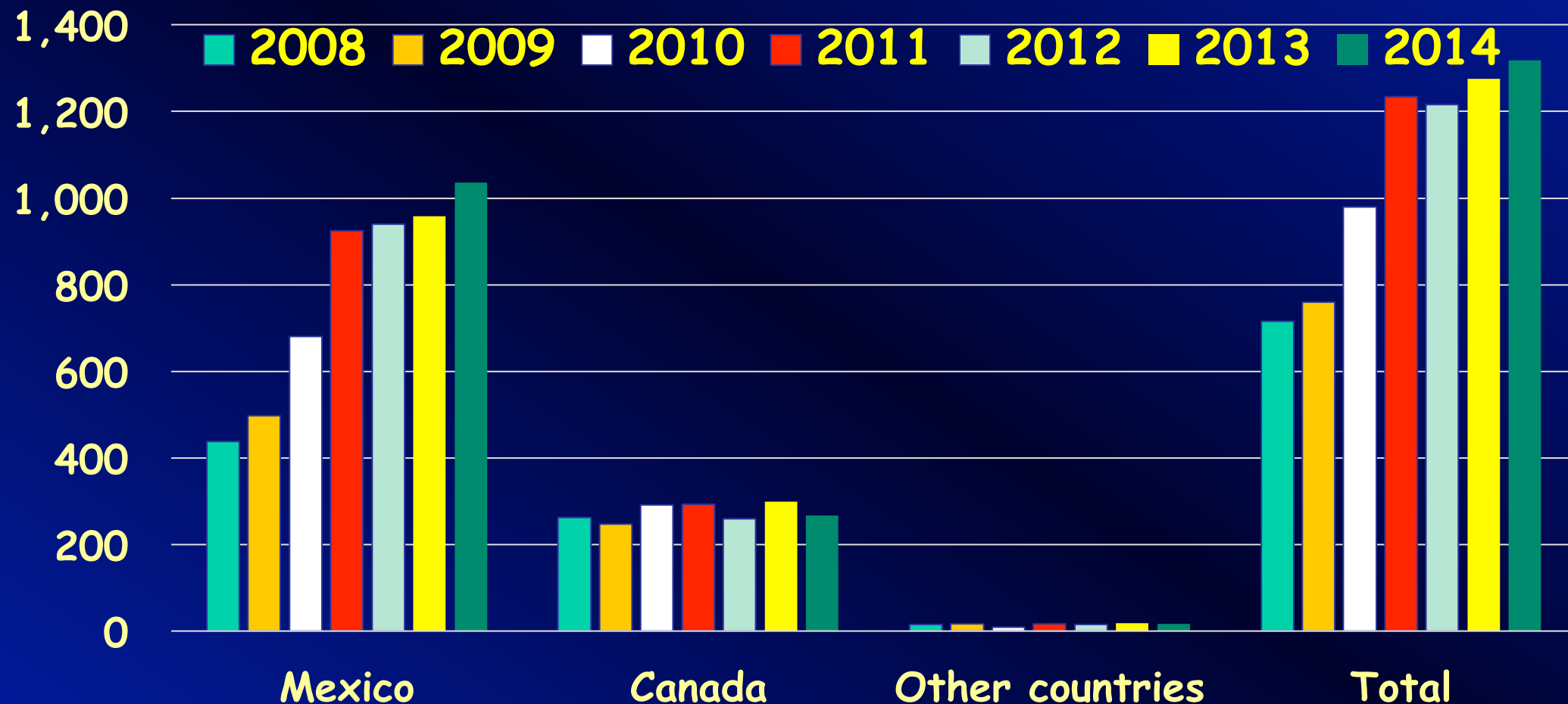
US Fresh Hothouse Tomato Imports, by Key Country, 2009-2014, (million pounds)



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

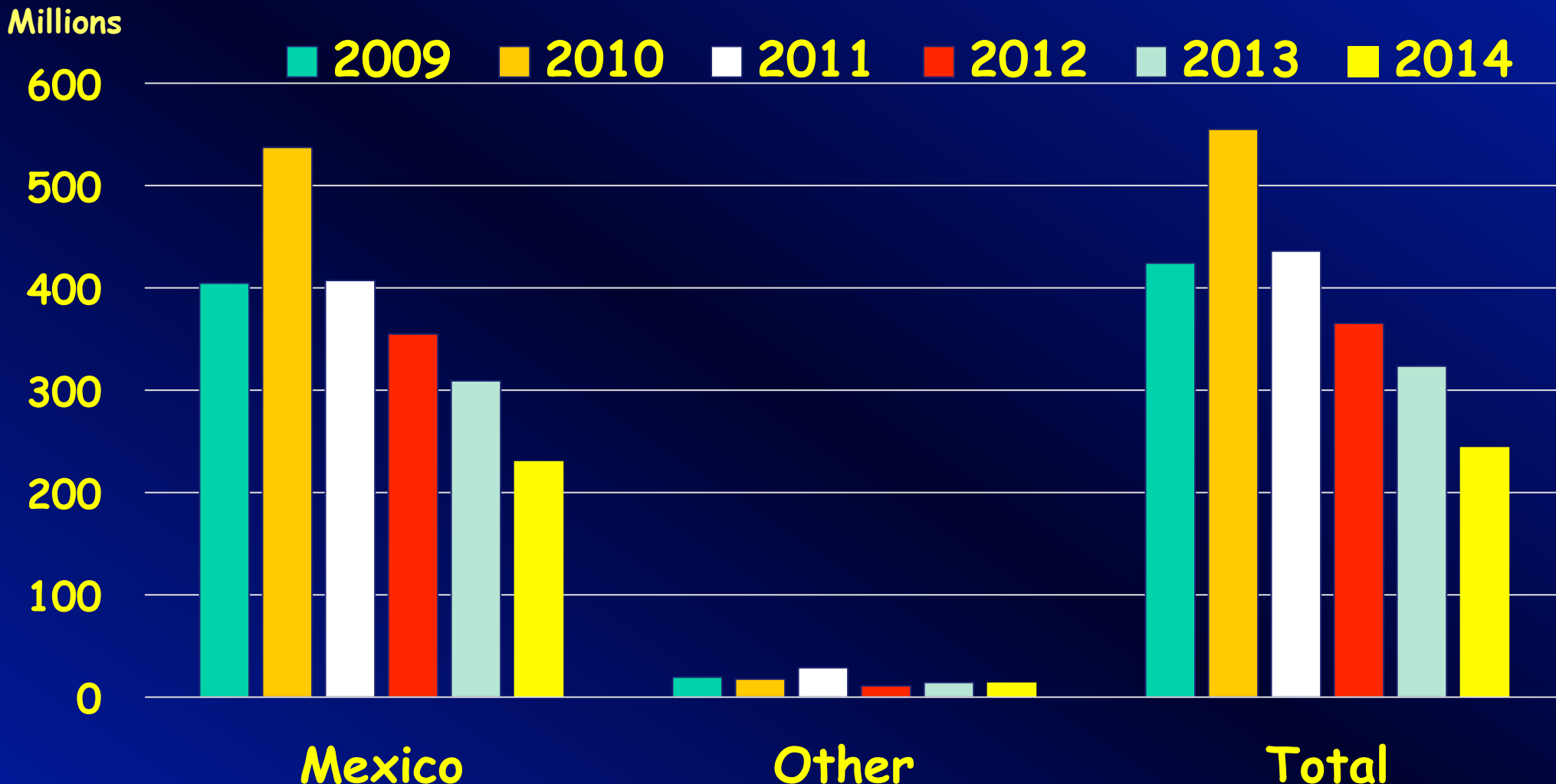
US Fresh Hothouse Tomato Imports, by Key Country, 2008-2014, (million dollars)

Millions



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

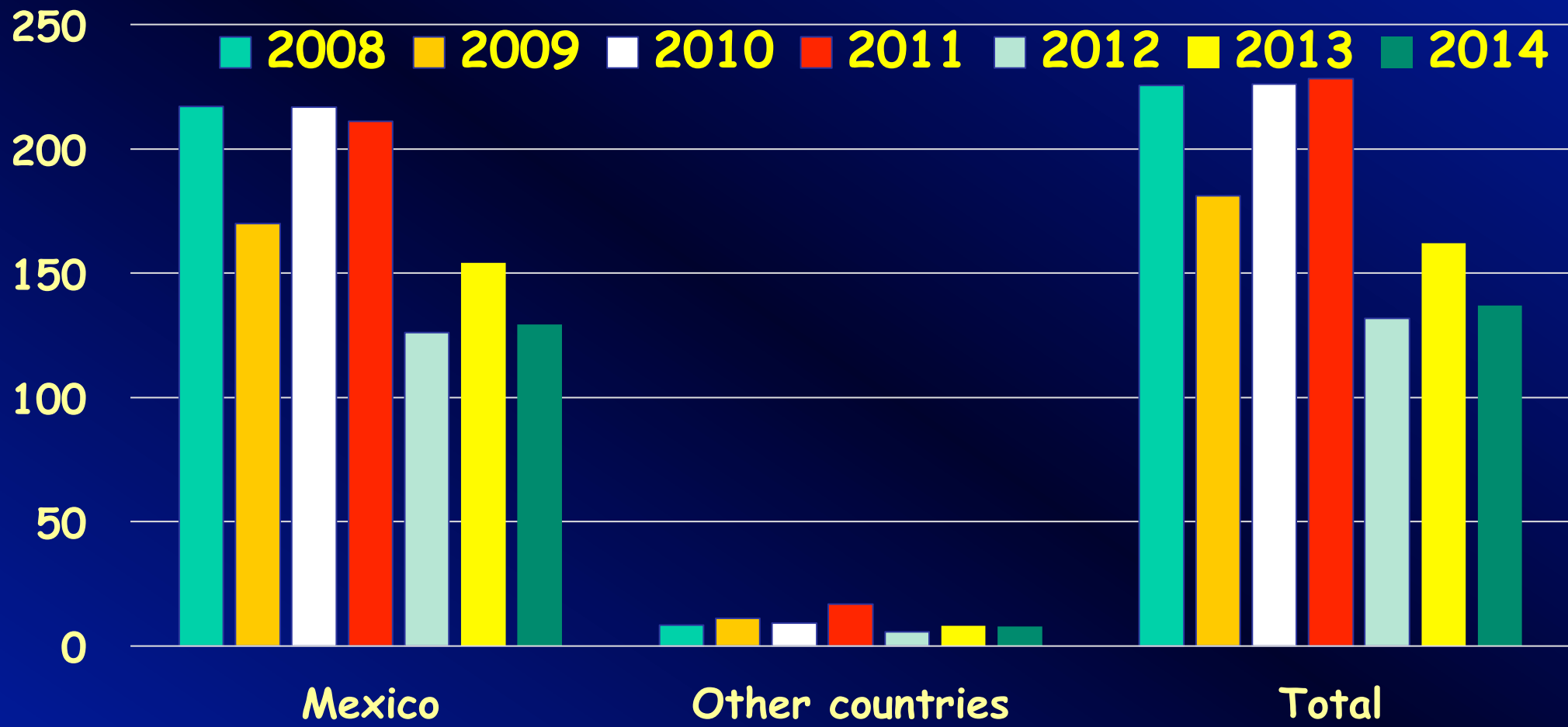
US Fresh Round Field Tomato Imports, by Key Country, 2009-2014, (million pounds)



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

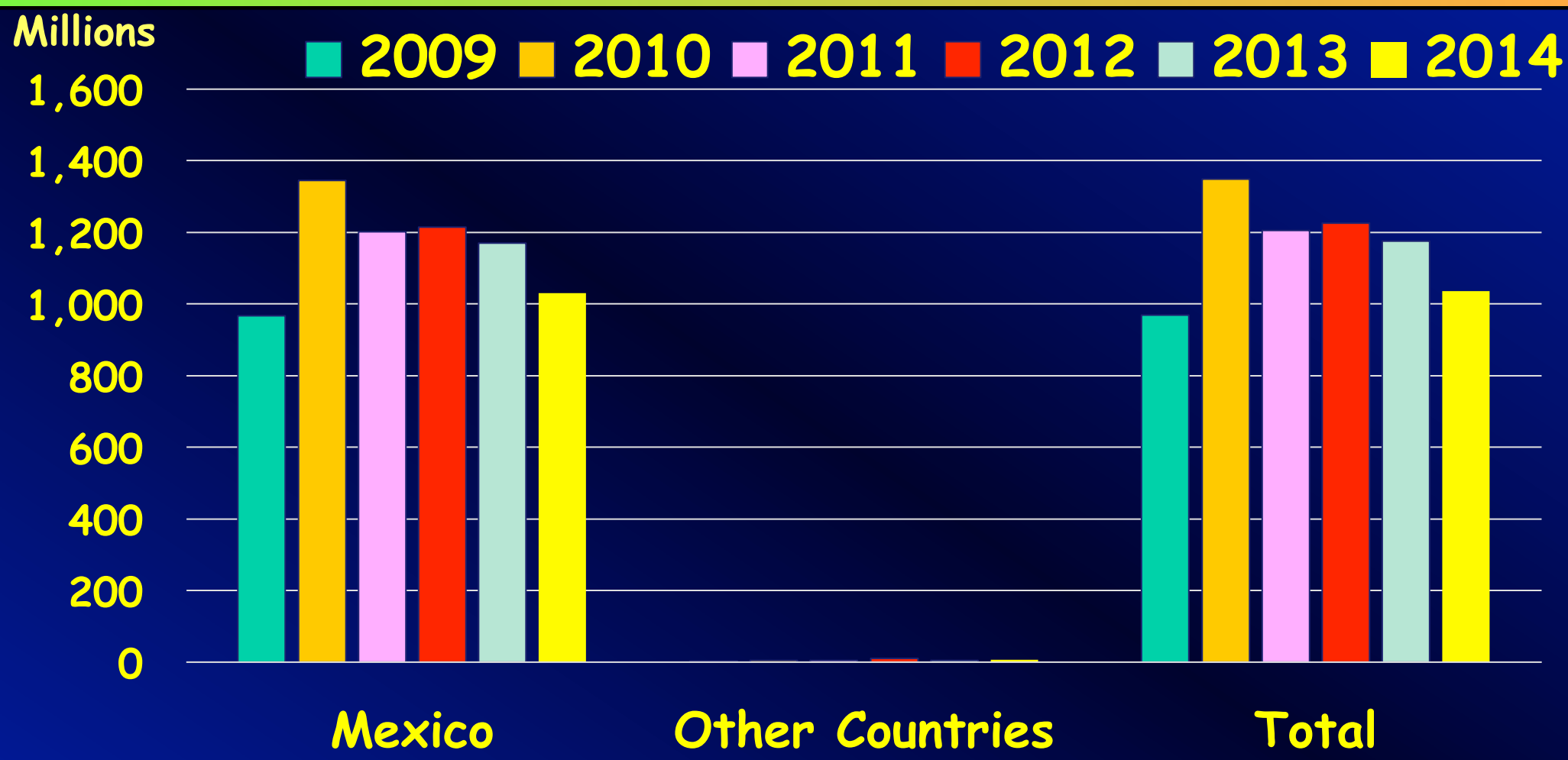
US Fresh Round Field Tomato Imports, by Key Country, 2008-2014, (million dollars)

Millions



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

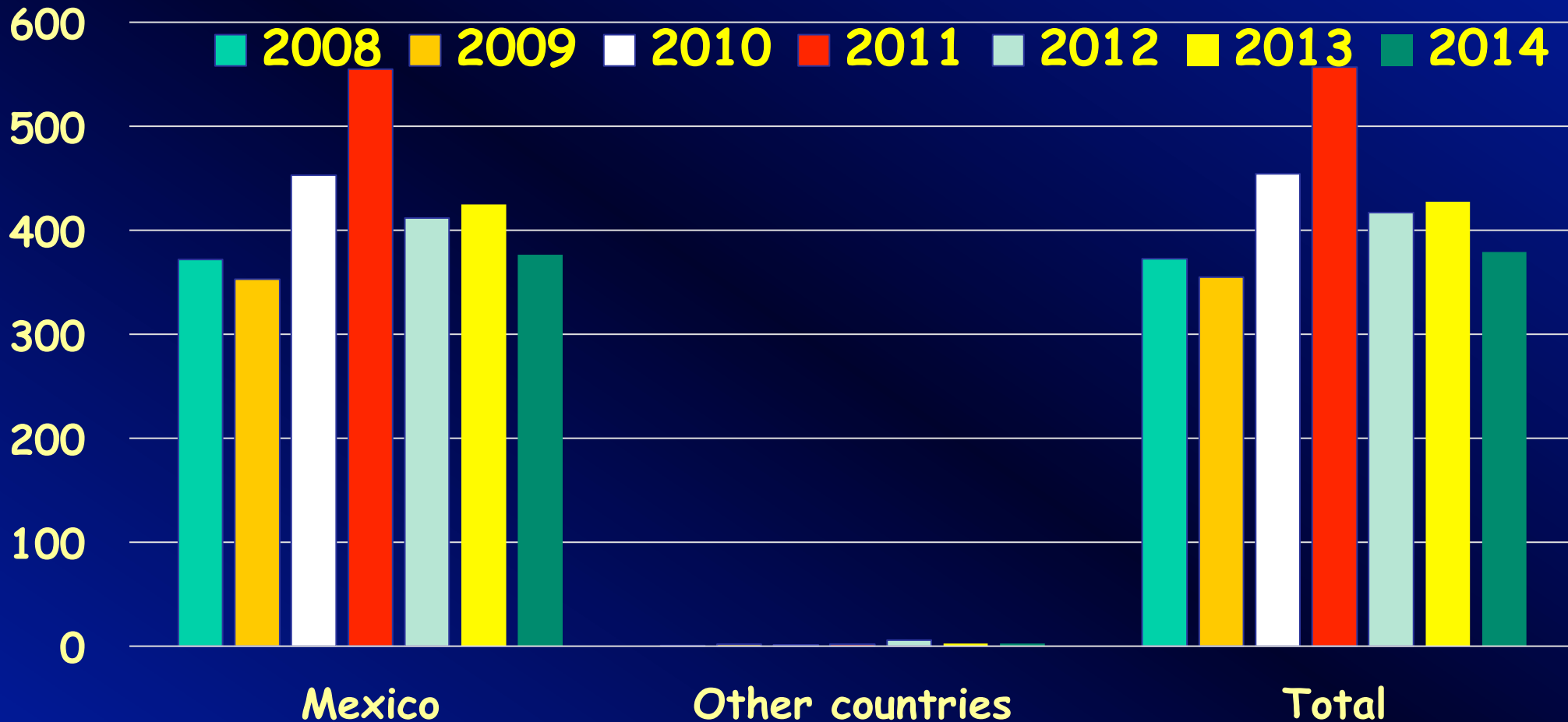
US Fresh Roma Tomato Imports, by Key Country, 2009-2014, (million pounds)



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

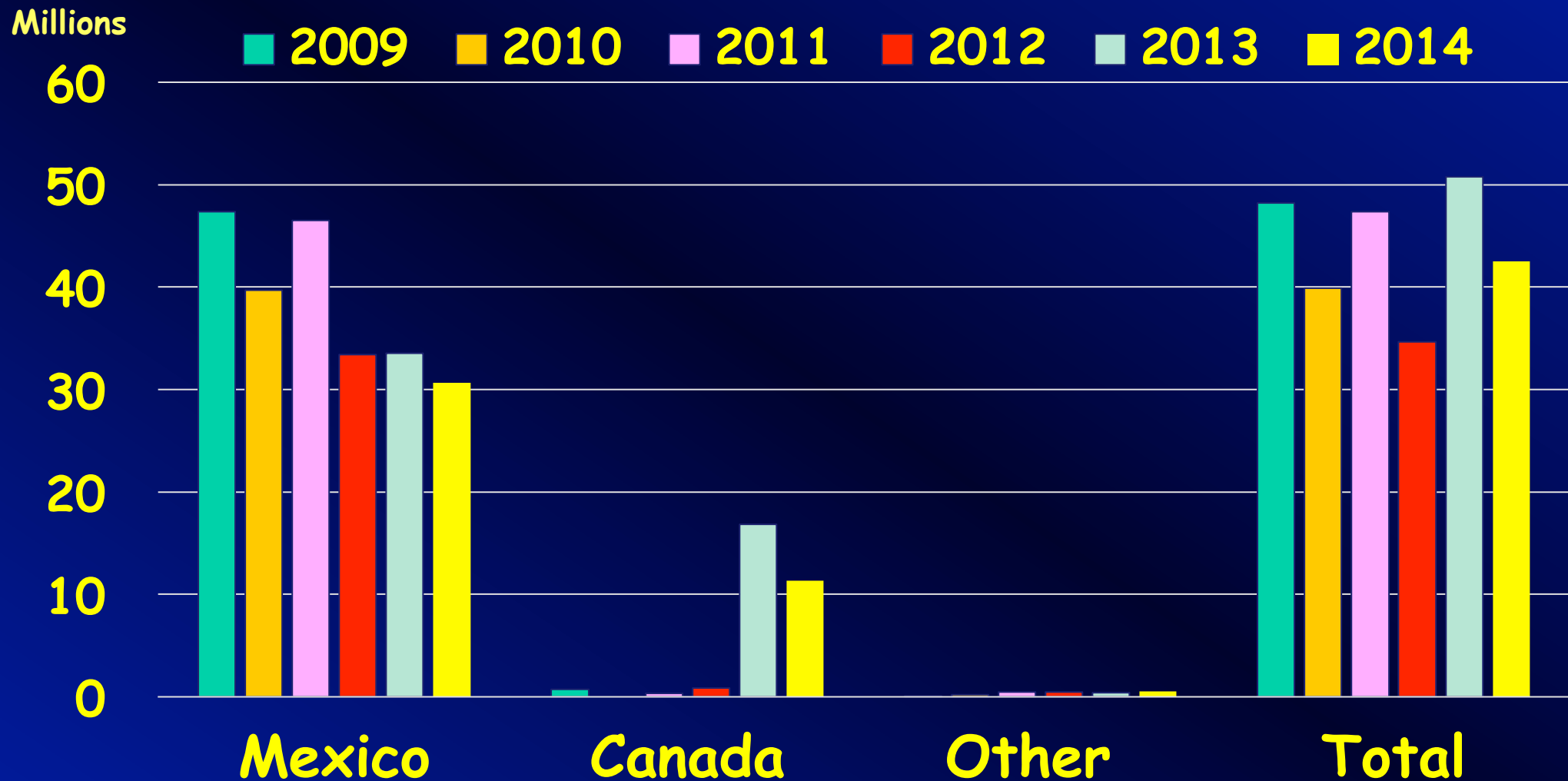
US Fresh Roma Tomato Imports, by Key Country, 2008-2014, (million dollars)

Millions



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

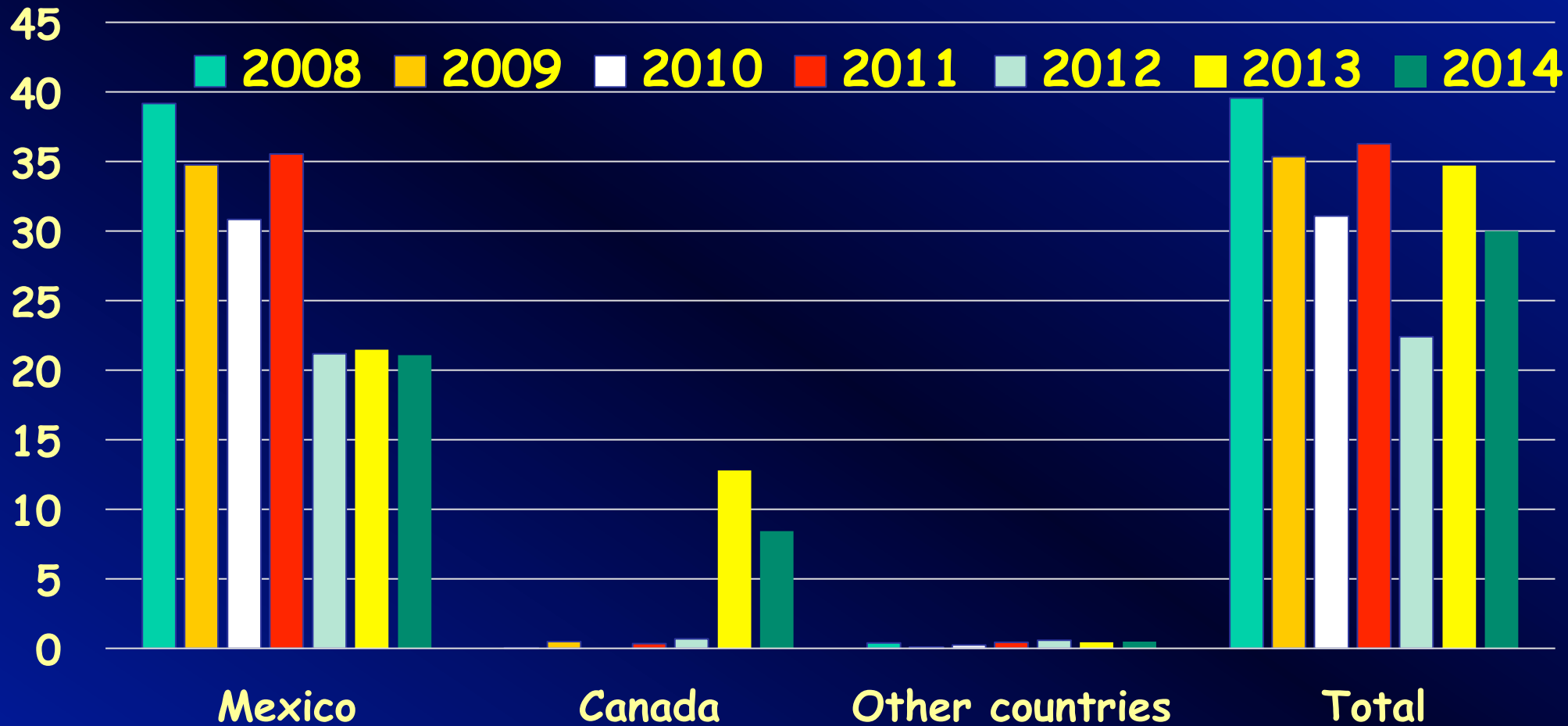
US Cherry Tomato Imports, by Key Country, 2009-2014 million pounds



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

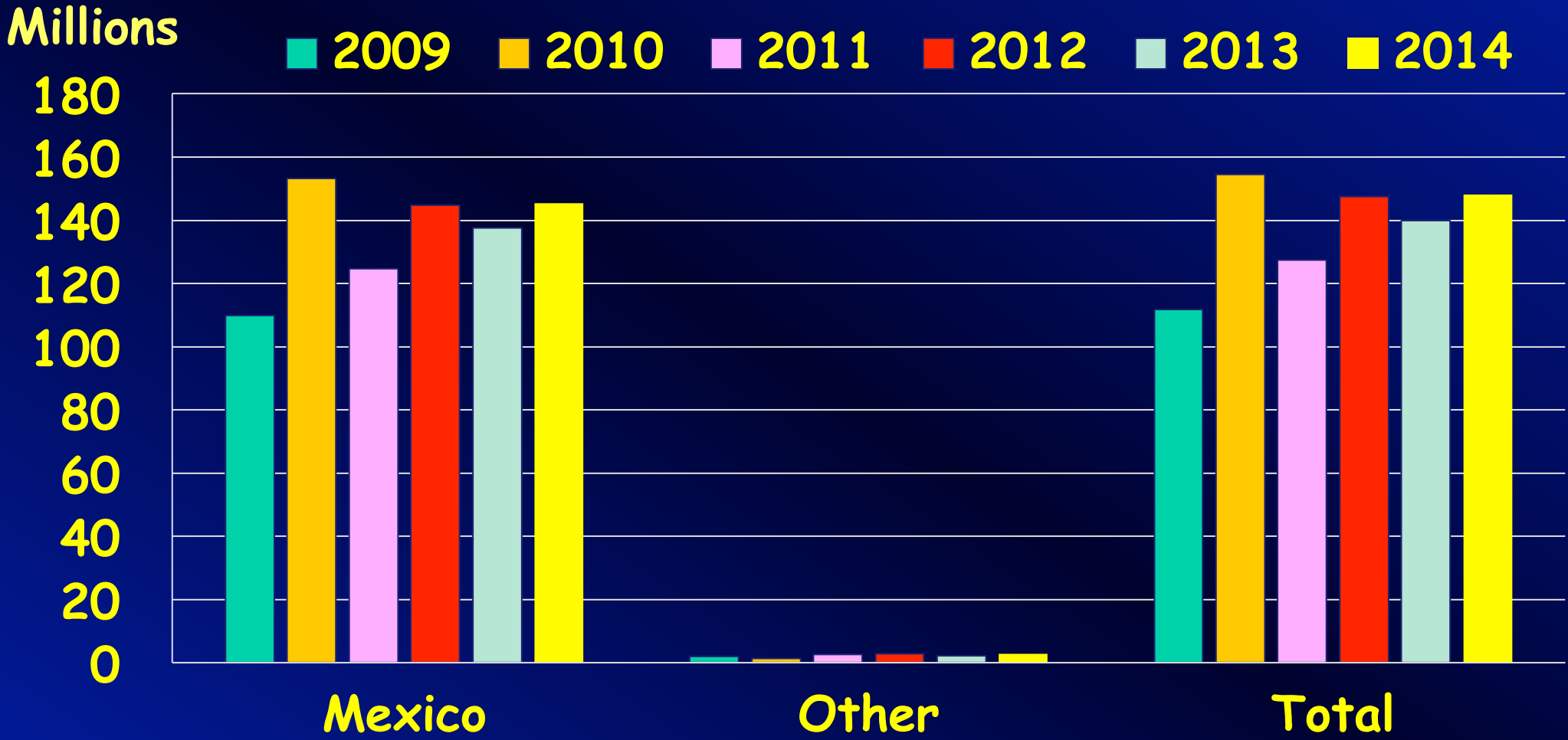
US Fresh Cherry Tomato Imports, by Key Country, 2008-2014, (million dollars)

Millions



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

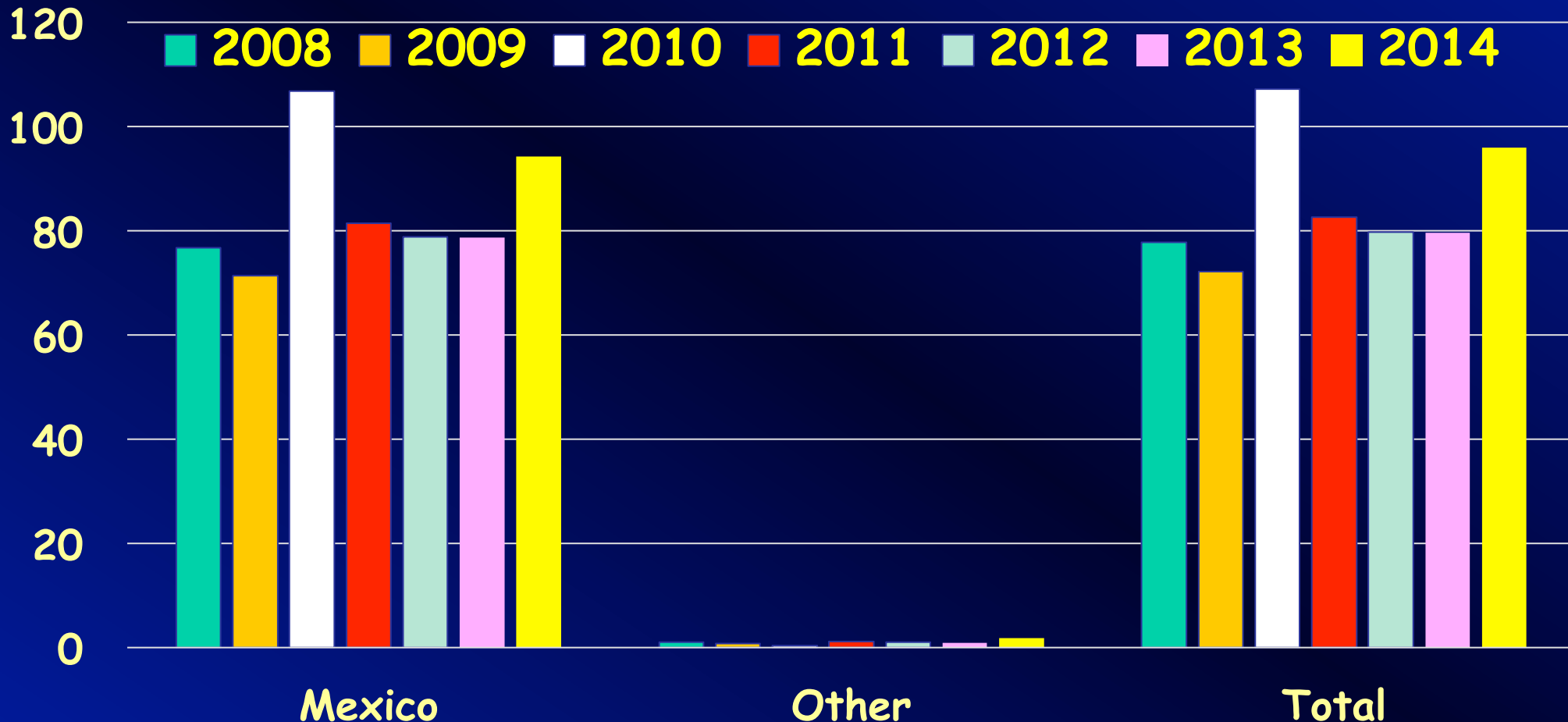
US Fresh Grape Tomato Imports, by Key Country, 2009-2014, (million pounds)



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

US Fresh Grape Tomato Imports, by Key Country, 2008-2014, (million dollars)

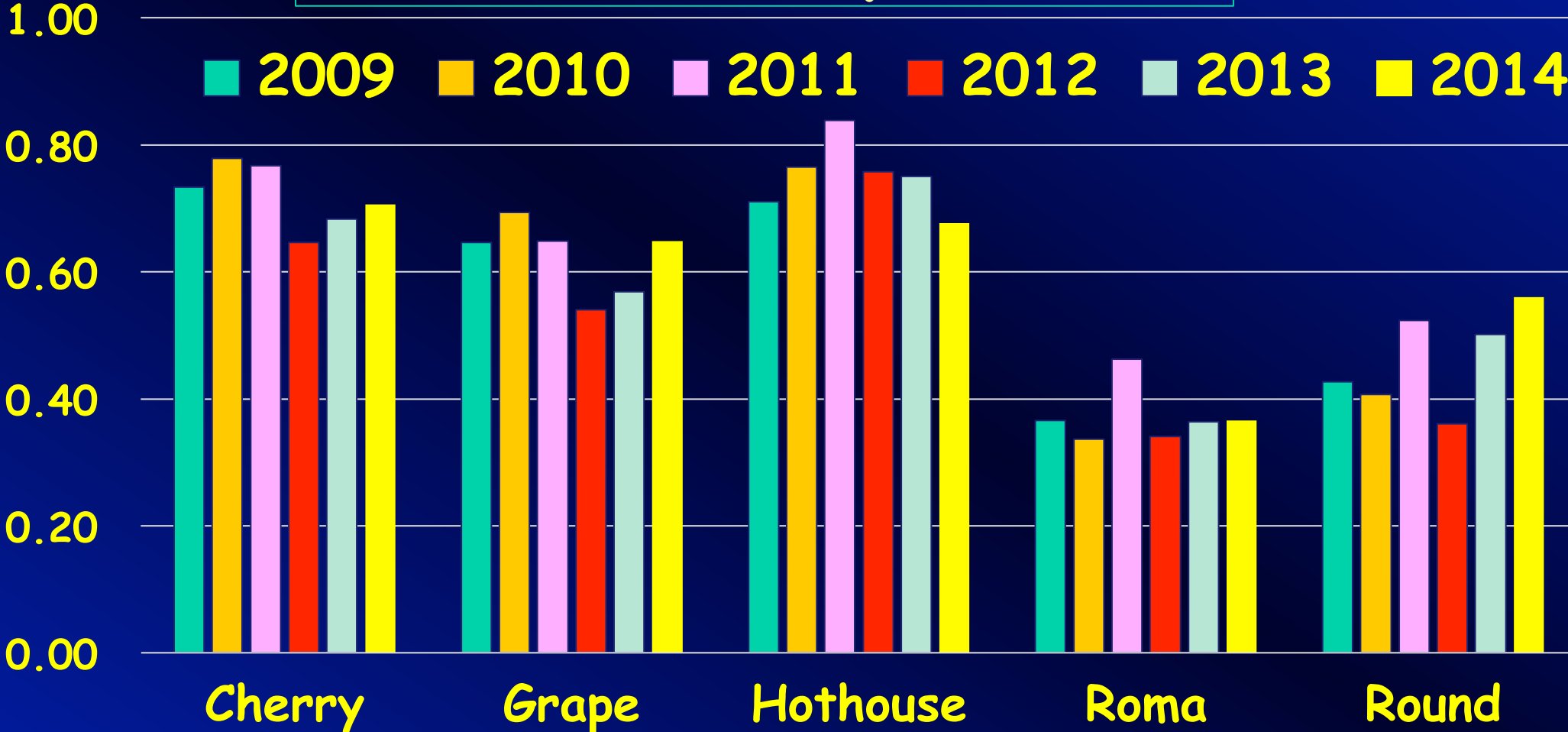
Millions



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

Average annual import unit value by fresh tomato variety, 2009-2014, all countries, US Dollars per pound

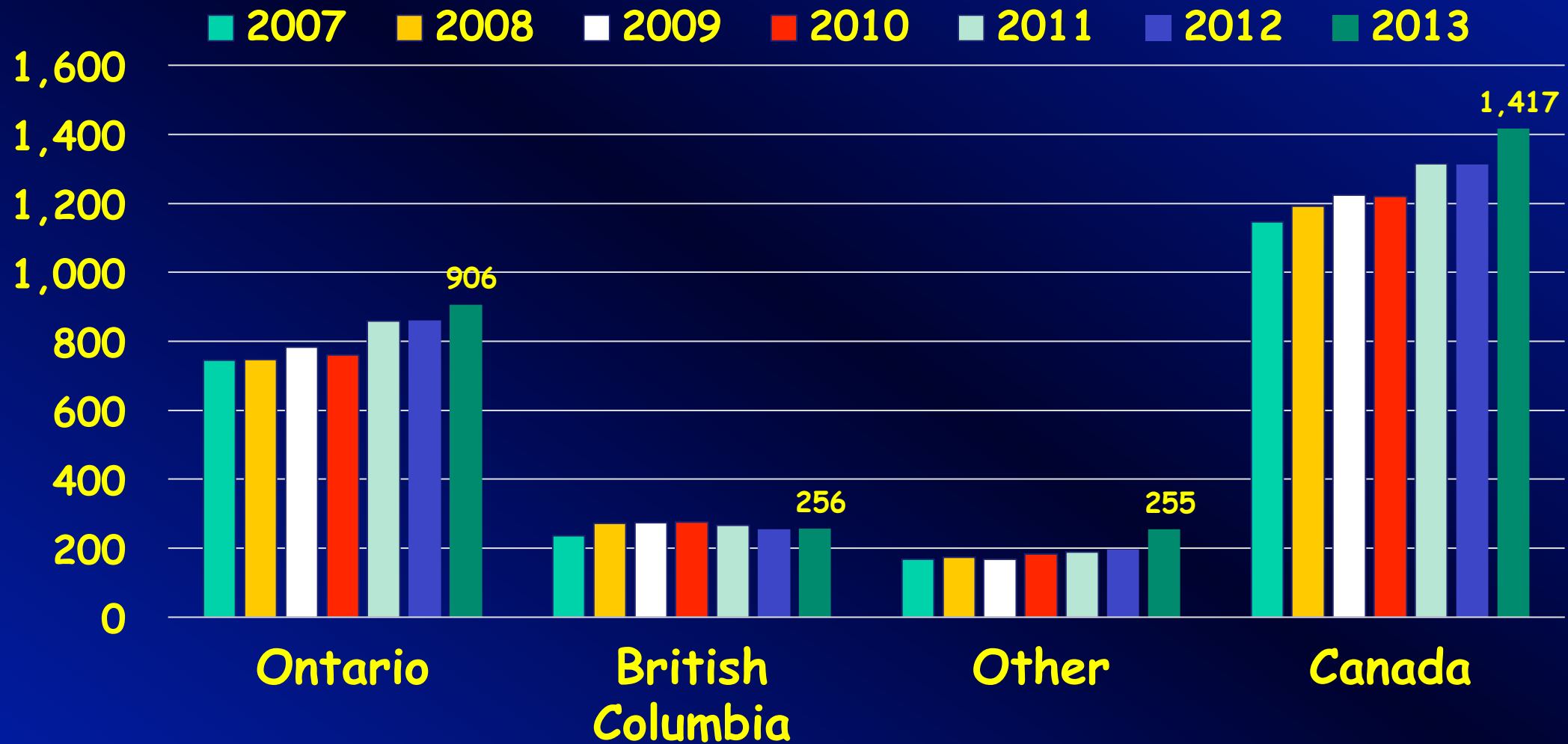
Note that in 2011 there was a major freeze in Sinaloa.



Source: US Department of Commerce, GATS online queries, FAS/USDA website.

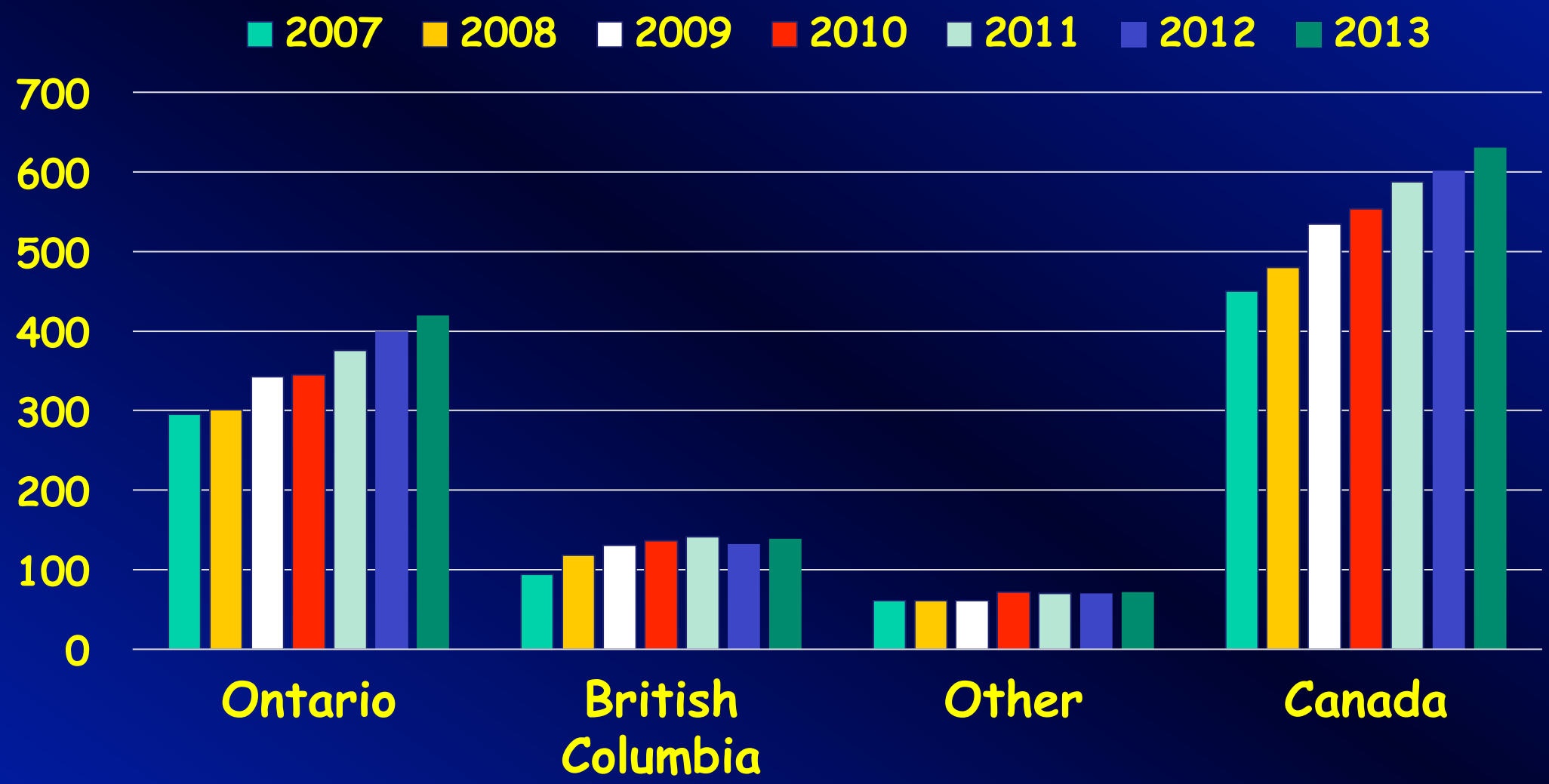
Canadian Greenhouse Tomato Trends

Canada: Area harvested of Greenhouse Tomatoes, 2007-2013 (acres)



Source: Stat Canada

Canada: Production of Greenhouse Tomatoes, 2007-2013 (million pounds)



Source: Stat Canada

Ontario Greenhouse Tomato Trends

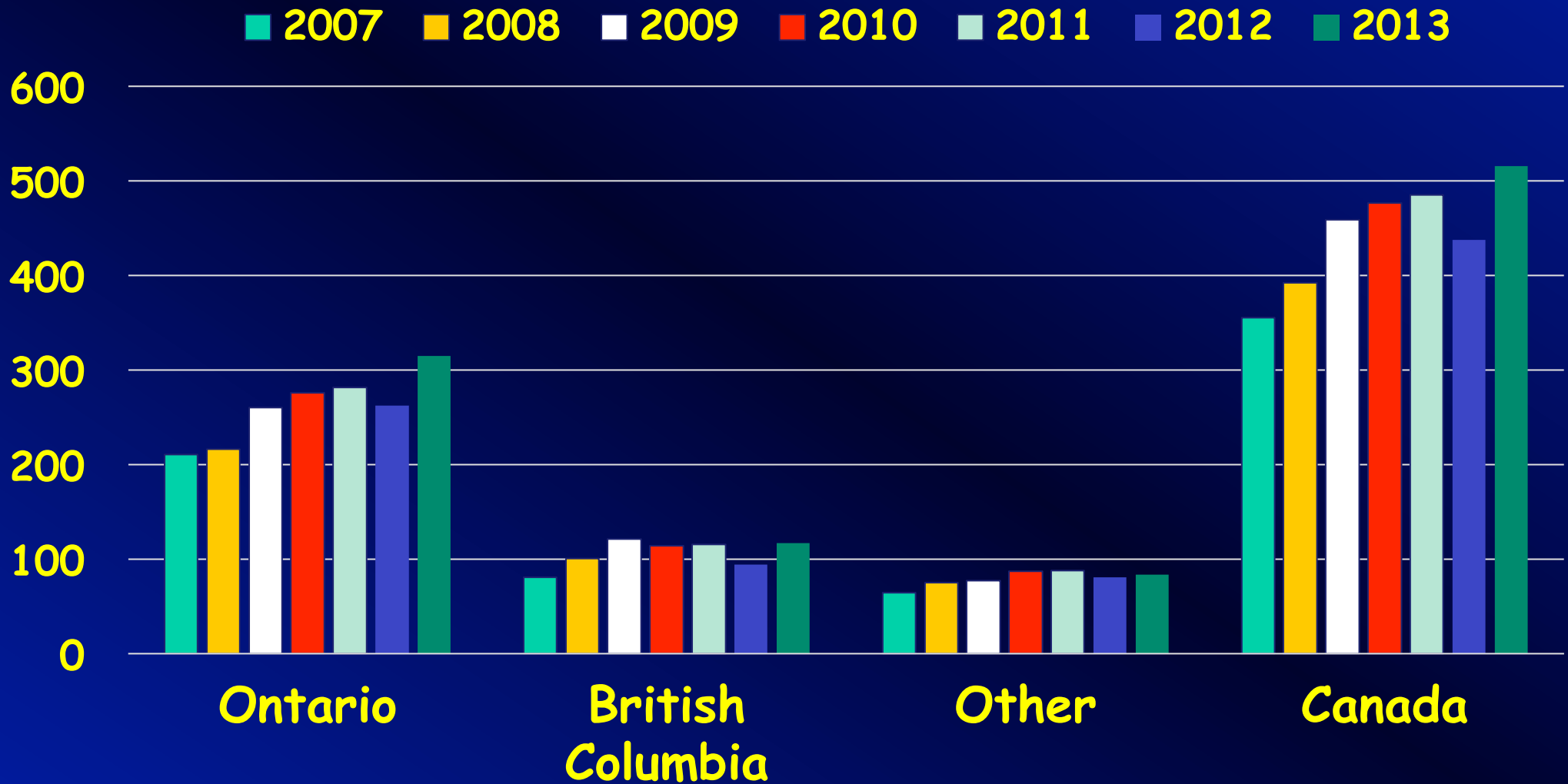
- In Jan. 2011, there were 404 acres of clusters/specialties in Ontario plus 378 acres of beefs (total 782 acres).
- In Jan. 2014, beef acreage was the same as in 2011, but there were 544 acres of specialties (total 921 acres).
- In Jan. 2015 total acreage was relatively stable (936 acres), but there was a major shift in product mix. Specialty clusters were up 69 acres over 2014. Regular clusters, beef and even specialty beef were down from 6-25%.
- Over half of Ontario acreage is now high tech glass with higher yields than in older houses.
- Most acreage growth in Ontario is in peppers and cucumbers vs tomatoes. In 2015, tomatoes are 36% of the total 2,553 acres of GH vegetables.

Source: Ontario Greenhouse Vegetable Growers (OGVG)

Canada: Greenhouse Tomato Trends

- Still very hard to do lights for winter production due to energy costs so most production is still spring-fall.
- Sourcing from Mexico growing for yr-rd supply.
- Push among buyers for Canadian marketers to produce more of their own supply.
- More investment in the USA: incl Mastronardi in Mich., Nature Fresh in Ohio, Houweling's in Utah, SunSelect in Calif.
- Contributing factors: US demand for locally grown, proximity to market; lower energy costs, enabling lights for winter production; govt incentives; avoidance of trade barriers.
- Investment from a large Mexican GH firm in an Ontario GH firm, and together are also investing in a GH in Virginia to do specialties and organics. (Red Sun Farms and Jem-D)

Canada: Farmgate value of Greenhouse Tomatoes, 2007-2013 (million Canadian dollars)



Source: Stat Canada

USA Greenhouse Tomato Trends

We really don't know the size of the US tomato greenhouse industry!

- In 2013, ERS/USDA estimated total US GH production at 603.3 million pounds.
- Big news is recent expansion in acreage in very high tech houses in areas of USA with cold climates, mainly with cross-border ownership and investment from British Columbia and Ontario growers.
- Acreage is unknown, but with the recent growth a preliminary rough estimate of acreage in production is in the range of 1430-1600 acres as of early 2015.
- Part of US capacity has not been utilized since 2011, although it's rebounding for several players.

Update on US Tomato Greenhouse Industry

- Eurofresh/Naturesweet (largest acreage in USA) reduced production in 2013 and is still estimated to be at only roughly 50% of capacity (160 acres) as of early 2015. These houses are older technology.
- Village Farms lost 82 acres at Marfa, TX facility May 31, 2012 due to hail storm. Gradually brought all but 22 acres back into production. Some acreage also out of production for part of 2010/11 season due to disease.
- Backyard Farms was dark as of mid-July 2013, back up in 2014.

Update on US Tomato Greenhouse Industry

- In 2014/15 new houses have opened in Utah, Ohio, Virginia and elsewhere. Plus acreage expansion in existing Michigan and other operations as projects are phased in.
- The impact of the recently underutilized capacity may not be fully taken into account when firms make expansion decisions.
- On the other hand, the recent expansion in acreage may just offset the acreage of houses not currently in production.
- Expansion may also be due to somewhat less competitive pressure from Mexico as a result of the higher minimum prices from the 2012 suspension agreement with Mexico (new prices went into effect March 1, 2013).

Update on US Tomato Greenhouse Industry

- Large capital requirements for high tech greenhouse construction, >\$1 million/acre.
- Growth in “closed” environment houses among some major players and sometimes with ability to use lights for winter production.
- In general, firms investing in technology so average yields up in newer houses. Hence, production is expanding more rapidly than acreage.
- Outside investors find industry sexy, and some investments may not be fully market-driven.

Update on US Tomato Greenhouse Industry

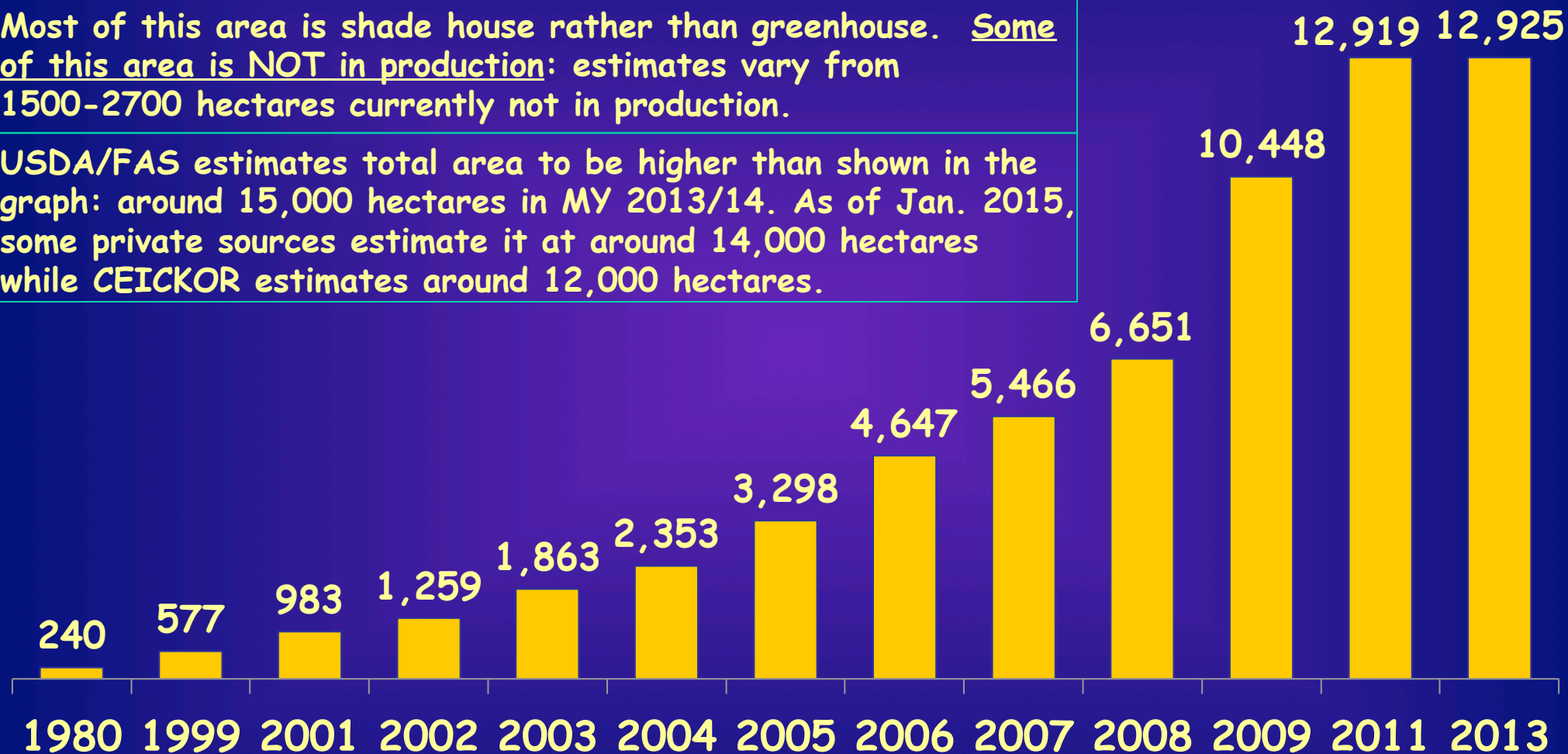
- Emergence of small urban players - "local," but impact is minor on national market. These are higher cost operators but they target premium markets.
- Big players focus on differentiation strategies: specialties, including snacking and heirloom; year-round contract pricing; and marketing services in order to compete with Mexico.
- Net result of recent trends, total US tomato GH production is now increasing!

Emergence of Protected Culture (PC) in Mexico Changes N. American Tomato Market Dynamics

Estimated Area of Protected Culture/Hothouse Tomatoes in Mexico, 1980-2013, Hectares (excludes other PC commodities)

Most of this area is shade house rather than greenhouse. Some of this area is NOT in production: estimates vary from 1500-2700 hectares currently not in production.

USDA/FAS estimates total area to be higher than shown in the graph: around 15,000 hectares in MY 2013/14. As of Jan. 2015, some private sources estimate it at around 14,000 hectares while CEICKOR estimates around 12,000 hectares.



Sources: Evolucion de la Oferta Hortícola en Mexico, 1989-2009, CAADES, Sept. 27, 2010 and various other sources, including USDA/FAS GAIN Mexico Tomato Annual Report, May 30, 2014, and Cook's adjusted online queries from the SAGARPA website, SIAV for 2013 AND SIAPRO for 2011.

Mexican Fresh Tomato Industry Trends

- Sinaloa is and always has been the primary producer and exporter of fresh tomatoes in Mexico (open-field and PC) and leads in PC. According to AMHPAC, about 22% of PC acreage is in Sinaloa, 15% in Jalisco, 12% in Baja CA, 41% in the remainder of Mexico.
- PC gives food safety advantages, reduced water and labor use/acre, and reduced chemical inputs due to improved disease control. These factors have driven long-standing export-oriented field growers in Sinaloa and Baja California to transition into PC in recent years. Intense disease pressure has been a major motivator.
- Most high tech GHs are located in central Mexico in high altitude locations where light levels are high, climates are temperate, and yr-round production can be obtained, making investments in expensive GHs worthwhile.

Mexican Fresh Tomato Industry Trends

- The growth in new PC tomato production in central Mexico has increased competition for Sinaloa and Baja, which completely dominated exports in the past.
- Shade houses or low tech GHs are the right technology for tropical low coastal areas like Sinaloa, and have given growers an advantage in being able to produce with higher quality, yields and packouts, and longer shipping seasons than in the open-field.
- In Sinaloa, technology is moving toward houses that are hybrids between the original shade houses and GHs. Much of this production is not hydroponic. Growers continue to experiment with technology and production methods, comparing the impact on per unit costs of production and ave. prices.
- PC is viewed as improving long-term ag sustainability.

Mexican Fresh Tomato Industry Trends

- Labor is becoming more constrained in Mexico and labor productivity is higher in PC relative to open field.
- Per unit production costs in PC operations in Sinaloa are less than in GH production in Canada and the US.
- In Baja California there is little open-field tomato production left going to export markets.
- In Sinaloa, most round tomato open-field production for export is gone. There is still substantial open-field production of romas for export but with PC dominating.
- Total Mexican tomato acreage has been declining due to higher productivity using PC. In 1990, tomato planted area was 85,500 hectares vs 75,800 in 2000 and about 44,504 in MY 2012/13 (USDA/FAS Gain Report # MX4043, Mexico Tomato Annual, 5/30/2014).

Mexican Fresh Tomato Industry Trends

- GHs and shade houses are capital- management- and technology-intensive relative to open-field production. Higher capital costs in Mexico slow the rate of investment.
- Training is improving in Mexico such that management expertise for PC operations is getting better (such as at CEICKOR.com.mx).
- Tomato growers in Sinaloa report no recent expansion in PC area there, mainly due to US market saturation.
- Due to improvements in varieties, types of houses and technology, Sinaloa growers are extending shipping seasons in that state into the summer (formerly ending in late April).
- Leading Sinaloa grower-shippers have also been investing in PC production in central Mexico (more GHs than shade houses) in order to fulfill buyer demand for yr-round supply.

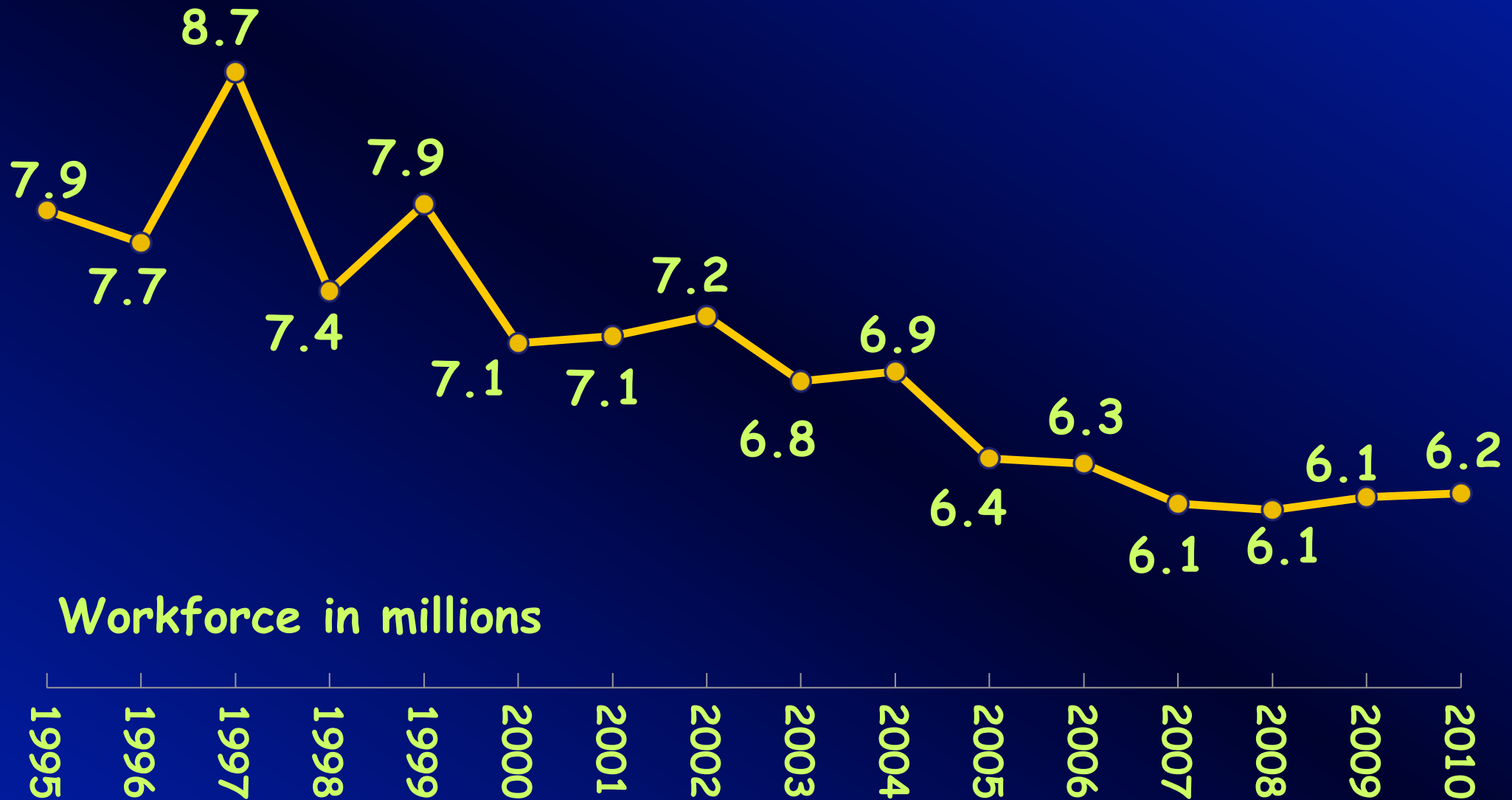
Mexican Fresh Tomato Industry Trends

- Sinaloa growers that invest in central Mexico are not shifting their acreage there, but rather increasing total acreage and becoming yr-rd suppliers.
- More shippers (including in central Mexico) are selling directly to retailers and use of forward contracts is increasing, reducing consignment sales.
- The market east of the Mississippi river is now being directly served by Sinaloa-based growers, whereas historically they focused on Calif/the west. This represents an important shift!
- Crossings of tomatoes in Texas (both from Sinaloa and central Mexico) have grown substantially with Nogales less important in relative terms. New highway via Durango to Texas helped Sinaloa diversify markets.

Mexican Fresh Tomato Industry Trends

- Canada and US still have the advantage in the higher-value GH specialty tomatoes, packaging innovations, and marketing.
- Mexican high tech GHs will concentrate on TOVs and specialties which cannot be done in shade houses.
- Given US market saturation more Mexican tomato growers are seeking to diversify to reduce dependency on this market. Some are developing direct sales to Canadian retailers, others are focusing on product differentiation.
- Danger of over-expansion in other fruit/veg products without market intelligence and well-designed marketing plans.
- Due to govt programs, small-scale, undercapitalized growers continue to enter and exit and disrupt the PC tomato market.
- Export marketing from Mexico still too fragmented, remainder of N. American industry, whether GH or open field is relatively concentrated.

Mexico's Farm Workforce Has Declined between 1995 and 2010 - No panacea there either



Source: ARE Update May/Apr 2013 16(4):1-4

Conclusions

- There are now more tomatoes available from more locations in N. America in every season of the year, abundant supply!
- Demand is maturing for fresh tomatoes and cannibalization is rampant, across tomato types and sectors.
- Tomato market focusing more on quality, with more emphasis on flavor, aided by seed innovation.
- Canada and US have the advantage in specialties.
- In recent years there was little expansion in the US and Canadian greenhouse industries, with most expansion in Mexico.
- More recently there is expansion in the US and Ontario (not BC) and Mexico is stabilizing.

Conclusions

- GH investors in the US and Canada may not be fully factoring in the fact that in the last 3 yrs part of US capacity was not in production due to disease or weather damage.
- On the other hand, higher suspension prices have likely reduced consignment loads into terminal markets and improved the market outlook.
- Technology levels are improving in all areas of Mexico as in Canada and the US; everyone is seeking higher productivity in order to improve competitiveness in an ever more challenging market.
- Producers everywhere must think carefully about scaling their operations to meet customer demand and be market-driven in their planting decisions.

Conclusions

- Ongoing retail consolidation is leading to even fewer, larger buyers, often seeking secure sources of year-round supply, contracts, larger suppliers, and they have more interest in going direct to growers.
- Growing use of contracts may smooth out the highs and lows of market prices and improve operational efficiencies for growers, despite the risks.
- Some foodservice is beginning to take HH tomatoes, if successful this could aid HH growers currently facing saturated retail markets, but at the expense of mature greens (cost and food safety both important factors weighed by operators).

Conclusions

- Some greenhouse firms investing in high tech “closed” houses with aim in part to locate close to urban markets to exploit “local” trend, outcome unclear.
- Larger firms will likely have the advantage, regardless of sector.
- Services will become even more important in market success and working in partnership with customers to best meet consumer preferences.
- The US open-field mature green tomato industry has been declining. The foodservice industry, its primary market, is now rebounding from the recession, which may stimulate demand.