

Specialty Crop Outlook

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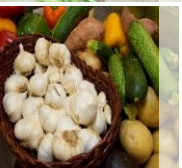
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EXTENSION

Outline



- Industry Overview
- Market trends
- Trade
- Other factors affecting the industry

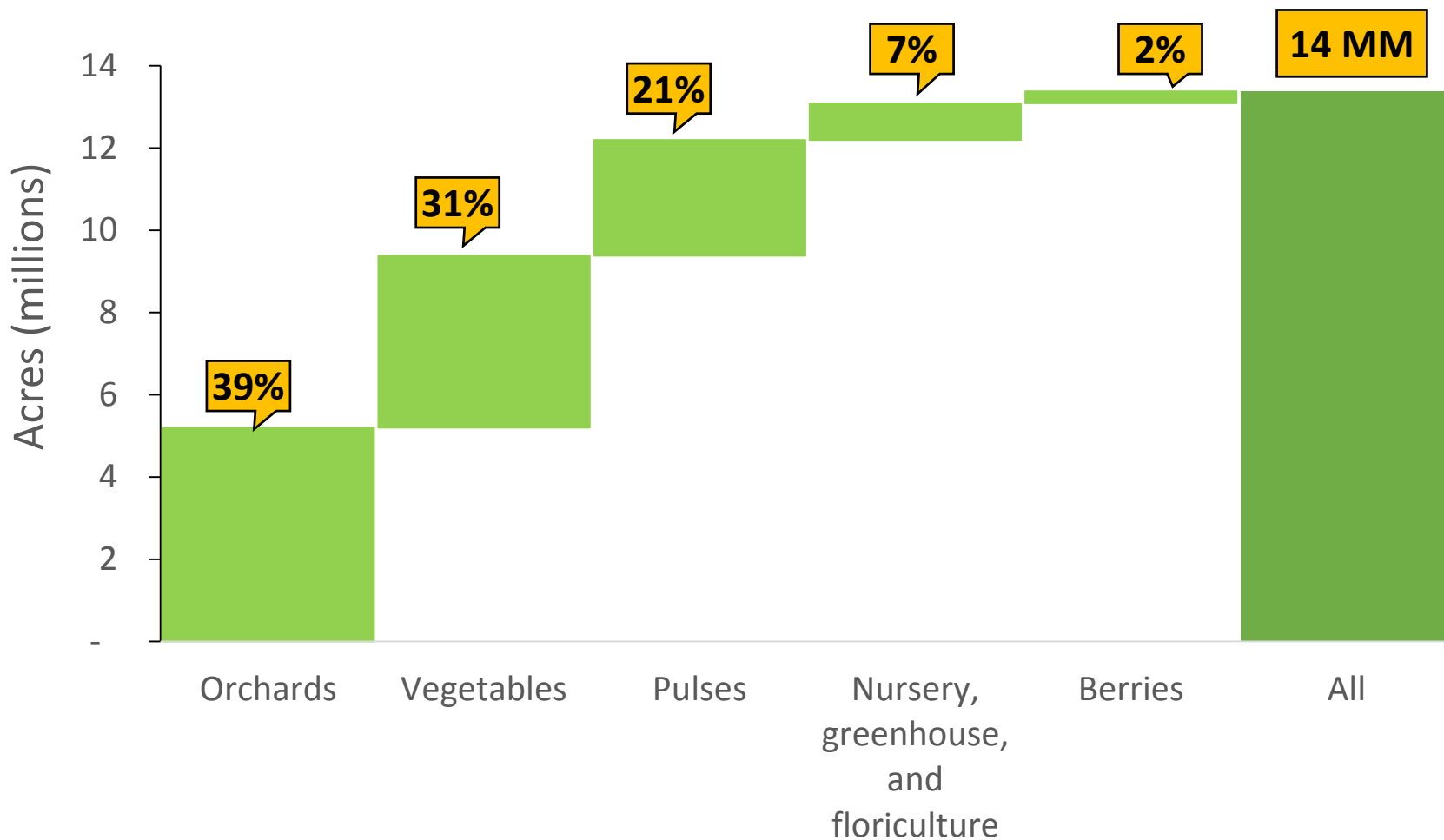
Industry overview

- According to the 2012 U.S. Census of Agriculture (orchards, vegetables, pulses, berries, nursery and floriculture):
 - ~245,000 farms
 - ~14 million acres
 - ~ \$57 billion value of production
 - ~ 27% of crop production value

Source: Census of Agriculture, 2012.

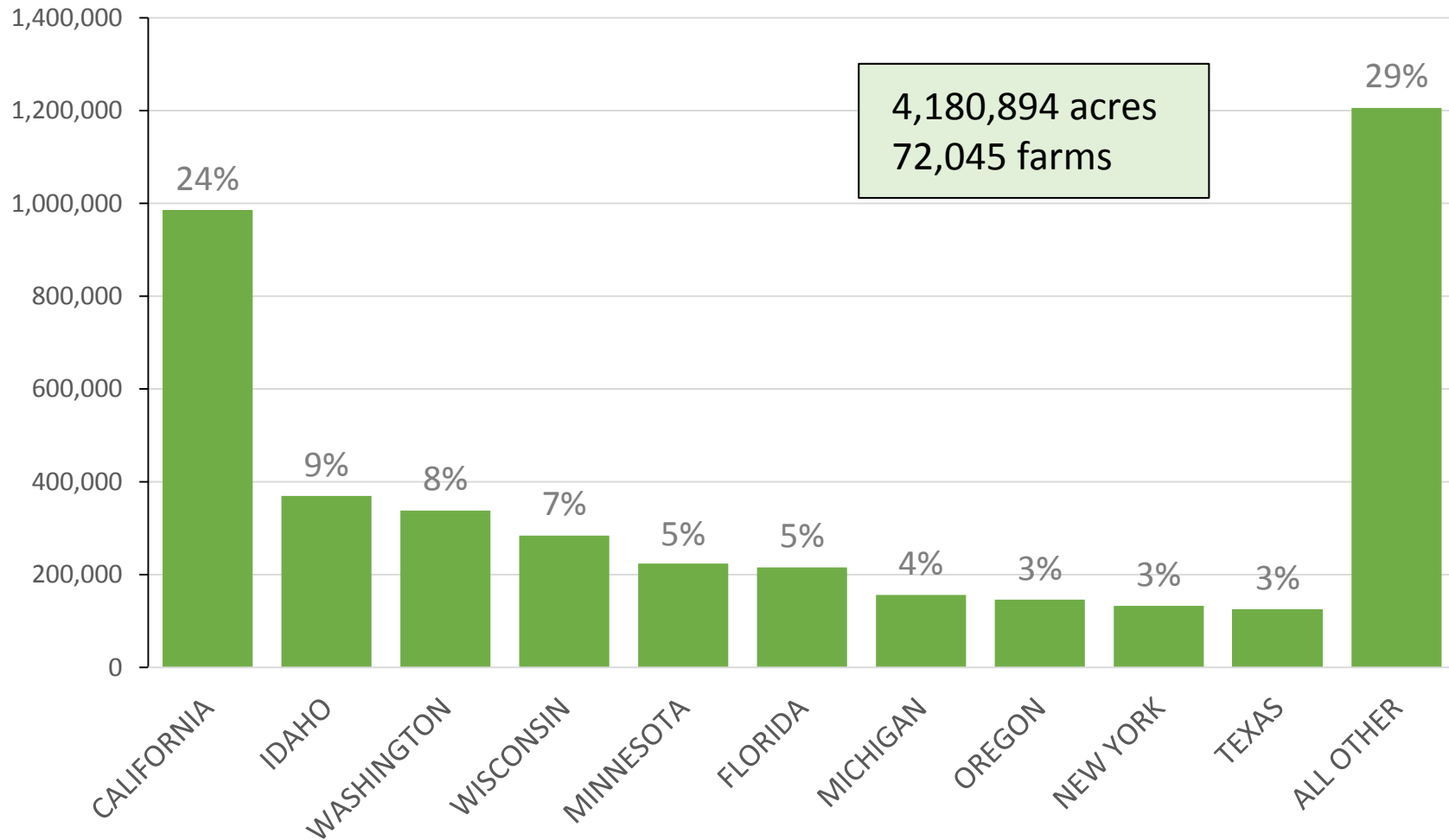


Acres in production



Source: U.S. Census of Agriculture, 2012.

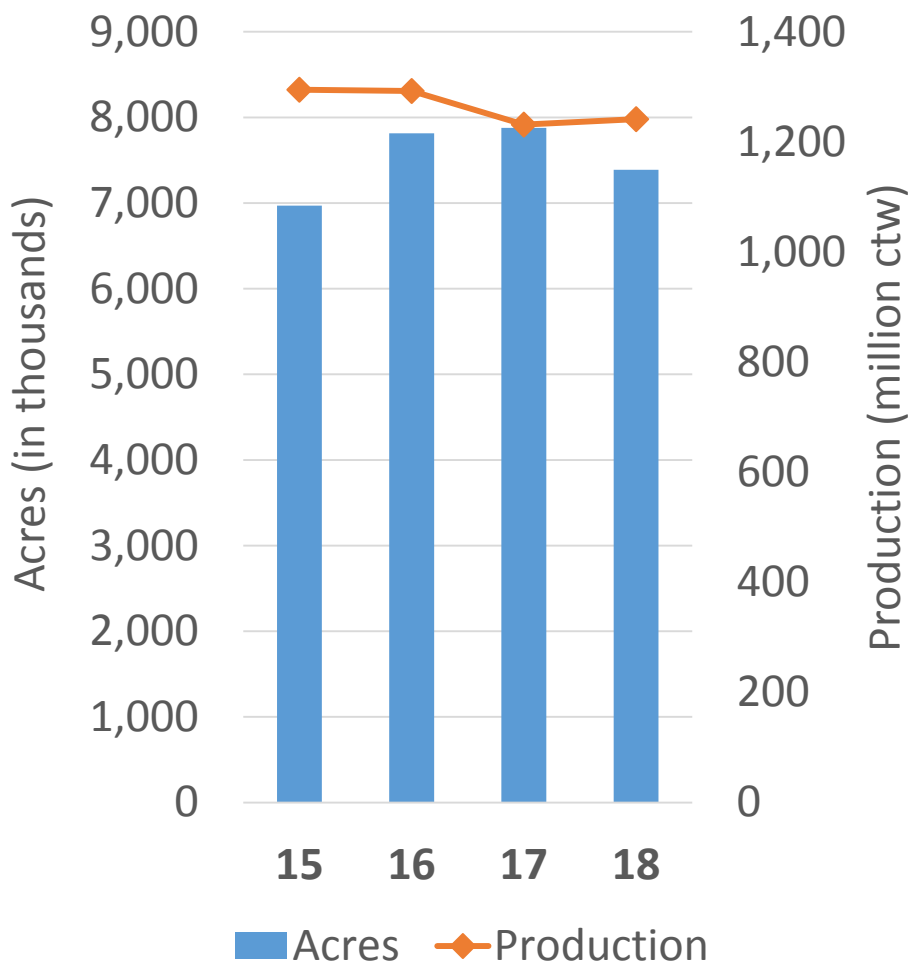
Vegetable acres in production



Source: U.S. Census of Agriculture, 2012.

Vegetable and pulse production

Vegetables and pulses



- Fresh vegetable production: ↓ 2% in 2017, and expected to increase slightly in 2018.
- Production value: ↑ 6% in 2017, small change forecasted for 2018
 - Leading crops (66%): potatoes, tomatoes, and lettuce
- Expected average prices: normal ranges

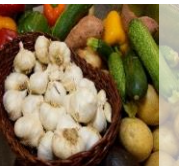
Historical vegetable prices



Commodity	1970	1980	1990	2000	2010	2017	% Change 2010- 2017
	----- \$/cwt -----						
Dark Green	9.0	18.5	19.3	27.0	38.0	48.7	28%
Head lettuce	4.8	8.9	11.5	17.3	21.1	36.4	73%
Spinach	11.4	24.8	28.2	31.8	42.7	64.5	51%
Red & Orange	8.9	18.1	16.8	20.7	29.2	29.2	0%
Tomatoes	11.2	20.7	27.4	30.7	48.2	37.3	-23%
Carrots	5.1	11.3	11.9	13.1	26.6	30.1	13%
Starchy	5.3	10.7	11.5	11.9	19.3	19.8	3%
Potatoes			8.0	5.3	12.7	10.6	-17%
Sweet corn	5.3	10.7	15.0	18.5	25.9	29.1	12%
Other	9.4	30.0	31.0	41.5	47.7	55.4	16%
Brussels sprouts	13.5	21.5	23.1	34.4	45.0	69.9	55%
Artichokes	10.3	34.7	29.5	60.3	50.2	70.0	39%
Total	9.2	24.5	24.2	31.9	40.2	46.3	15%

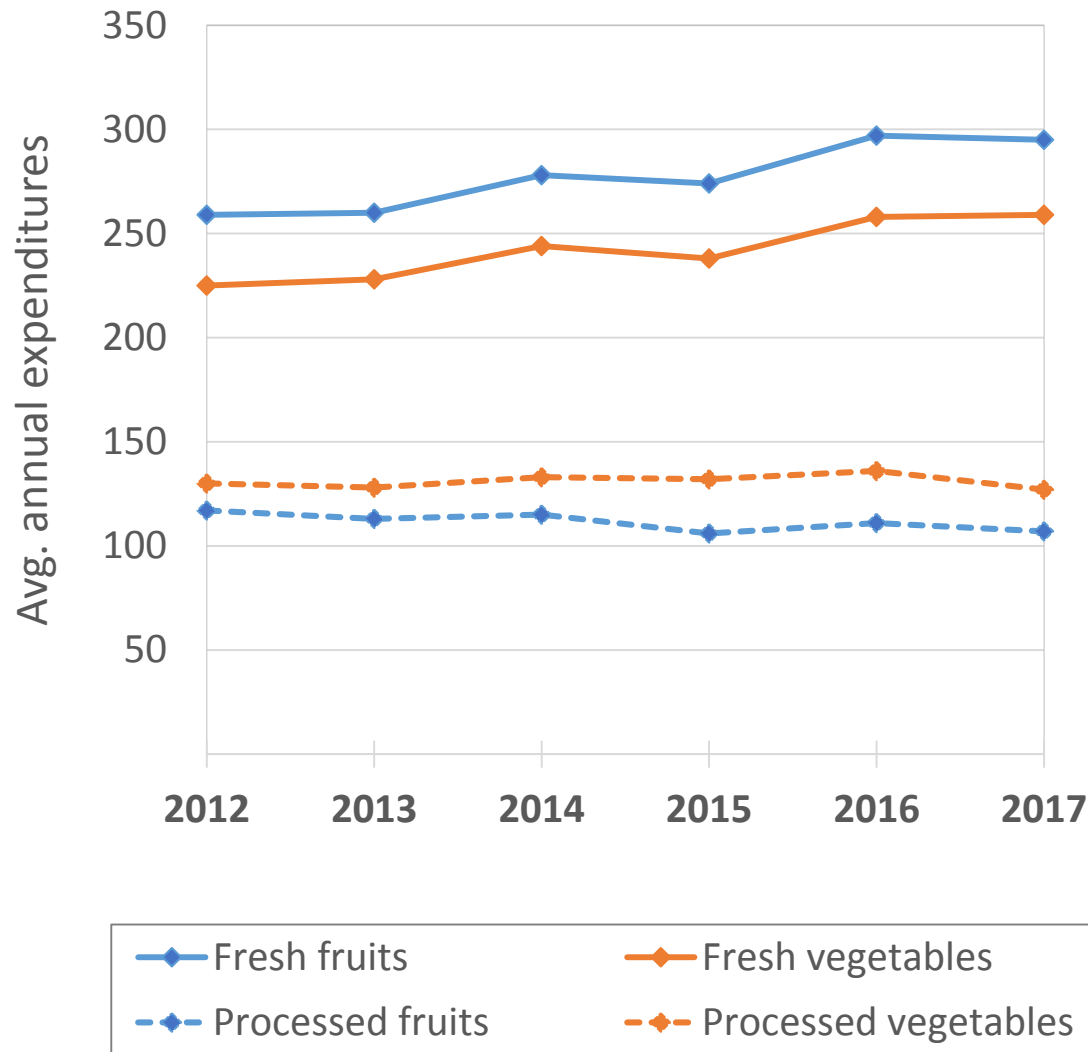
Specialty crop industry forecast

- Fruit, vegetable, and tree nuts over the next ten years:
 - Production is expected to increase: 0.6% annually
 - Value of production expected to increase: 2.7% per year
 - Higher prices
 - Citrus production expected to decline
 - Tree nut output is expected to increase
 - Share of fresh and process (juice, canned, frozen) market expected to remain constant



Market Trends

Fruit and vegetable consumption



- Per capital consumption relatively flat
 - Processed fruits and vegetables ↓
 - Fresh vegetables ↑
- Growth of total fruit and vegetables will likely come from population growth

Production and market trends

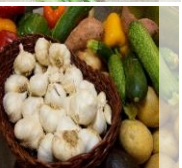
- Consumption of juices and canned fruits declining
- Consumption of fresh and frozen (e.g. berries) expected to increase
- Increase in the consumption of “superfoods”
 - e.g., berries, avocados
- Increase of controlled production – greenhouses and vertical farms
 - Mainly leafy greens
 - Urban production
 - Locally sourced



2018 Culinary Forecast

What's Hot in 2018 survey - the National Restaurant Association:

1. **Hyper-local**
2. Chef-driven fast casual concepts
3. Natural ingredients/clean menus
4. **Food waste reduction**
5. Veggie-centric/vegetables-forward cuisine
6. **Environmental sustainability**
7. Locally sources meat and seafood
8. **Locally sourced produce**
9. Simplicity/back to bases
10. **Farm/state-braded items**

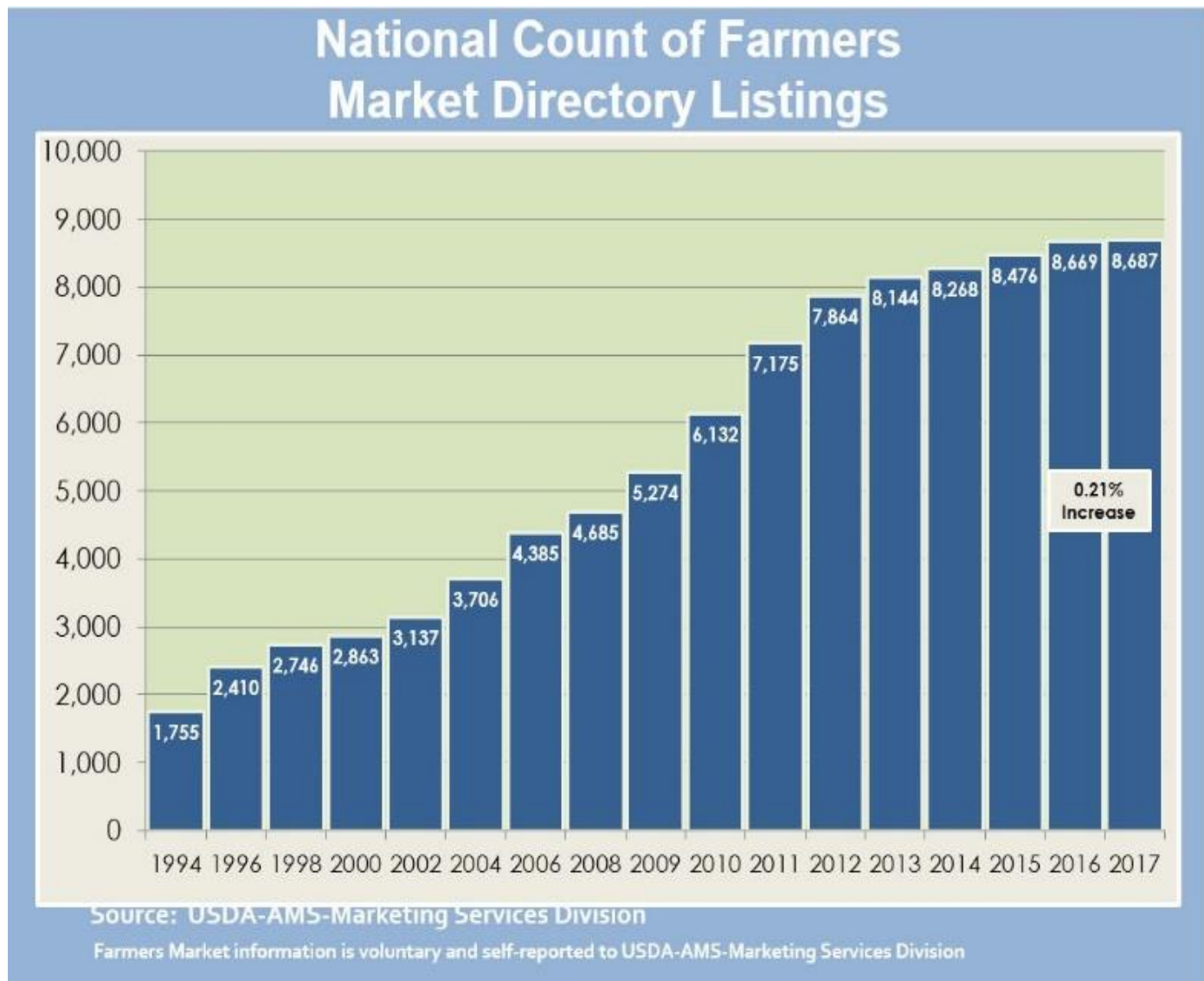


Importance of local market channels

- Approx. 74% vegetable growers sell directly to consumers (2017 State of the Vegetable Industry Survey – Vegetable Growers Magazine)
- High price per unit - small sale volumes
 - Prices for basket of produce generally more expensive at farmers markets than grocery stores (Salisbury, Curtis, Pozo, Durward, 2018)
- Growth of direct-to-consumer markets has started to slow down
- Increase of local offerings
 - Local products offered at conventional stores



Farmers' market are on the increase

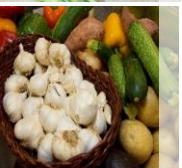


Source: <https://www.ams.usda.gov/sites/default/files/media/NationalCountofFMDirectory17.JPG>

Disruptive trends

- Online grocery sales ↑ 22% in 2018 (from 4.5% to 5.5%)
- Online grocery expected to grow 13% CAGR by 2022 (store sales by 1.3%)
- Amazon Prime large player
 - 11% bought groceries online
 - Prime Now, Fresh, Whole Foods
- There are still challenges to online produce sales
 - Freshness
- Autonomous grocery delivery (self-driving cars)
- Blockchain-enabled traceability (e.g., Walmart and leafy greens suppliers)





Trade

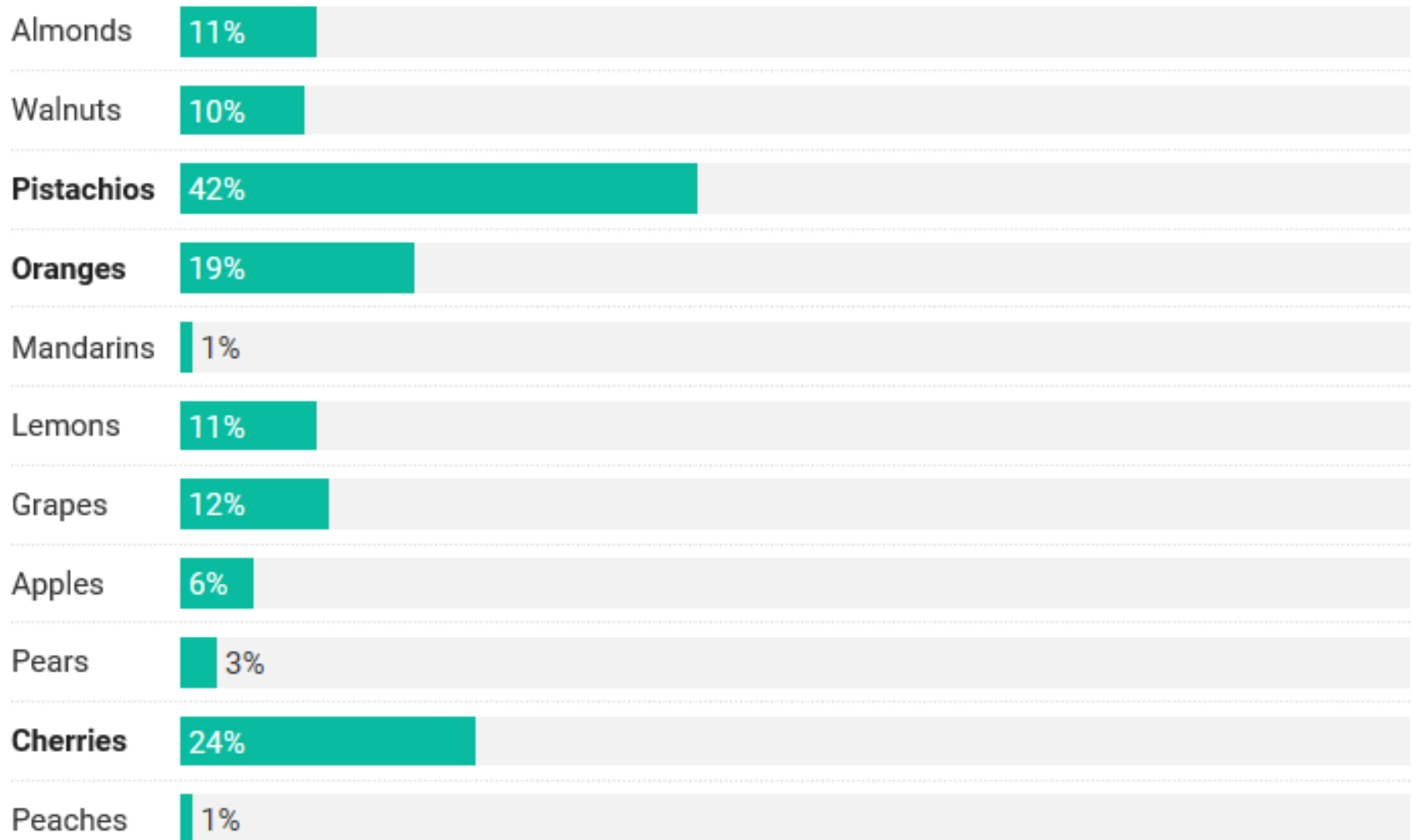
Trade

- Trade with China and retaliatory tariffs
 - 5-10% tariff (initially 10-25%):
 - Frozen vegetables, beans, preserved vegetables, fruit and vegetable juice (10%)
 - Frozen strawberries, grape juice, canned mixed vegetables, apple juice, cold/frozen sweet potatoes (10%)
 - Frozen assorted vegetables, frozen sweet corn, frozen potatoes, frozen cowpeas, string beans, cranberry juice (5%)
 - 25% (in addition to an earlier 15%): apples, pears, oranges, grapes, cherries
- ⇒ An accumulative 40% tariff for some products
- ⇒ This could represent a 50-65% rate for some of these products



Percentage of total U.S. exports sent to China

This chart shows the estimated percentage of the U.S. export total for certain fruits and nuts going to China this year.



Note: The percentage of U.S. mandarins and peaches exported to China was actually less than 1%.

Chart: Daniel Vanderhorst • Source: U.S. Department of Agriculture/Rabobank 2018 • [Get the data](#) • Created with

Trade

- Most affected: mandarin, walnut, grape, cherry and peach
- Trade losses for growers of 10 fruits and vegetables estimated at \$2.6 billion per year (Sumner and Hanon, 2018)
- Tariff in China and India also affecting pulse prices (e.g., lentils and chickpeas)
- Concerns about inspection delays and other non-tariff barriers
- Relief programs: Food Purchase and Distribution Program and Agricultural Trade Promotion Program



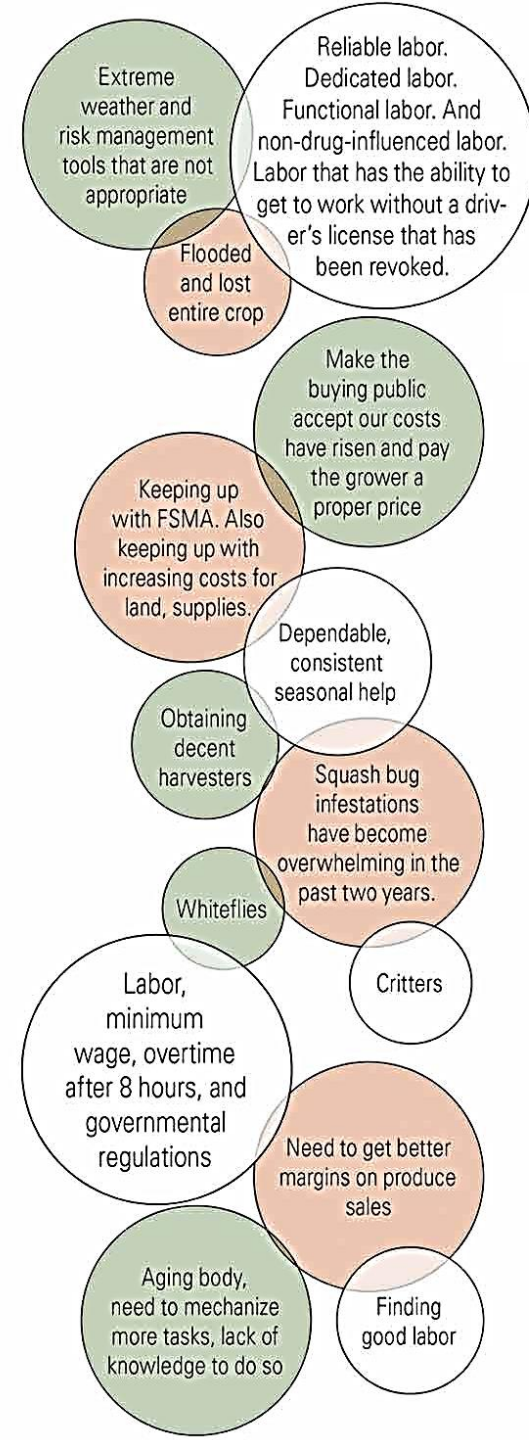


Other factors affecting the industry

Challenges

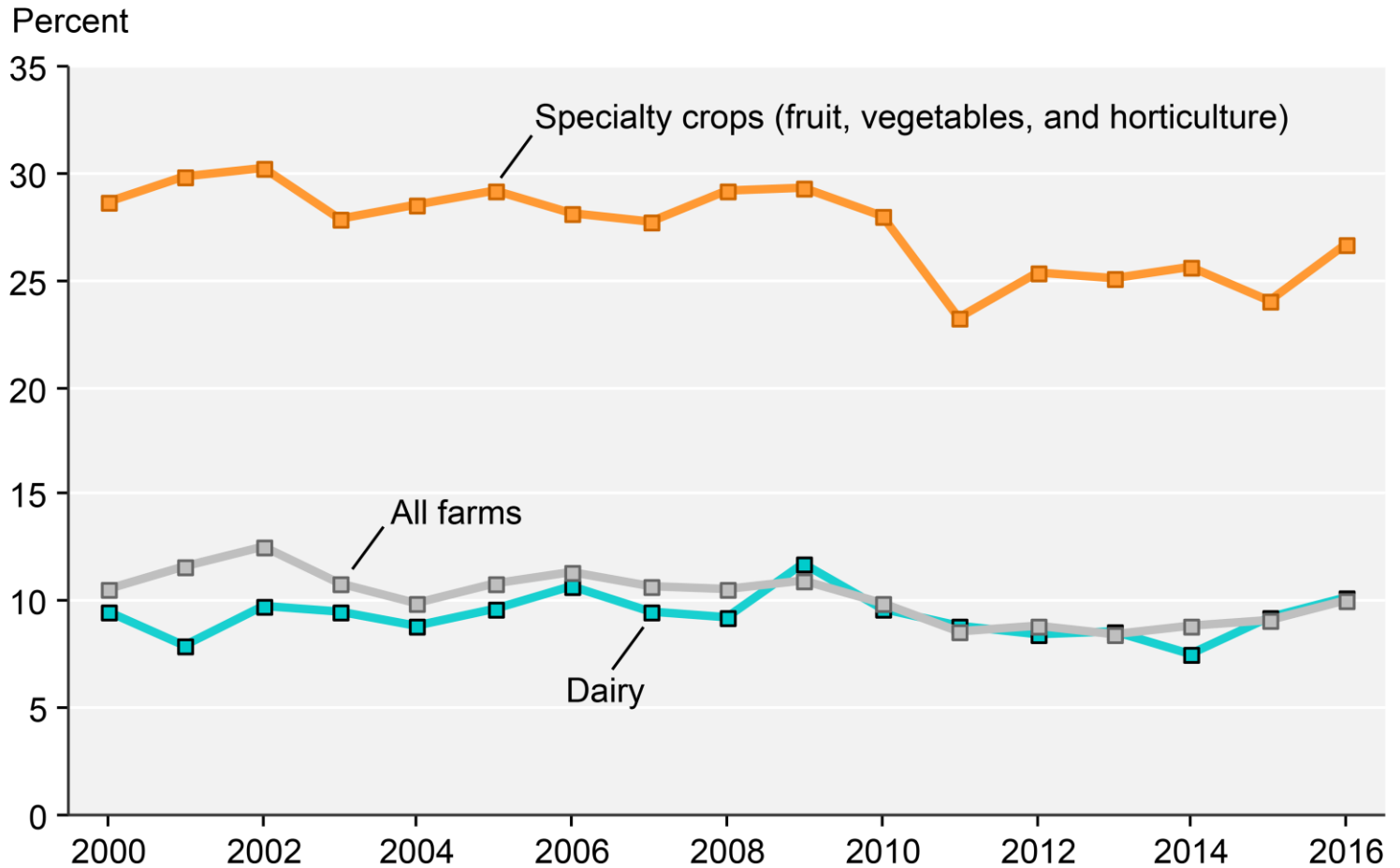
- Labor
 - Reliable, dedicated, functional labor
 - Consistent seasonal labor
 - Wages, overtime, government regulations.
- Extreme weather.
- Keeping up with FSMA.
- Rising costs, need of better margins.
- Need to mechanize more tasks – lack of knowledge.
- Insects.
- Finding efficient harvesters.

Source: State of the Vegetable Industry Survey – Vegetable Growers Magazine.



Labor Cost Share

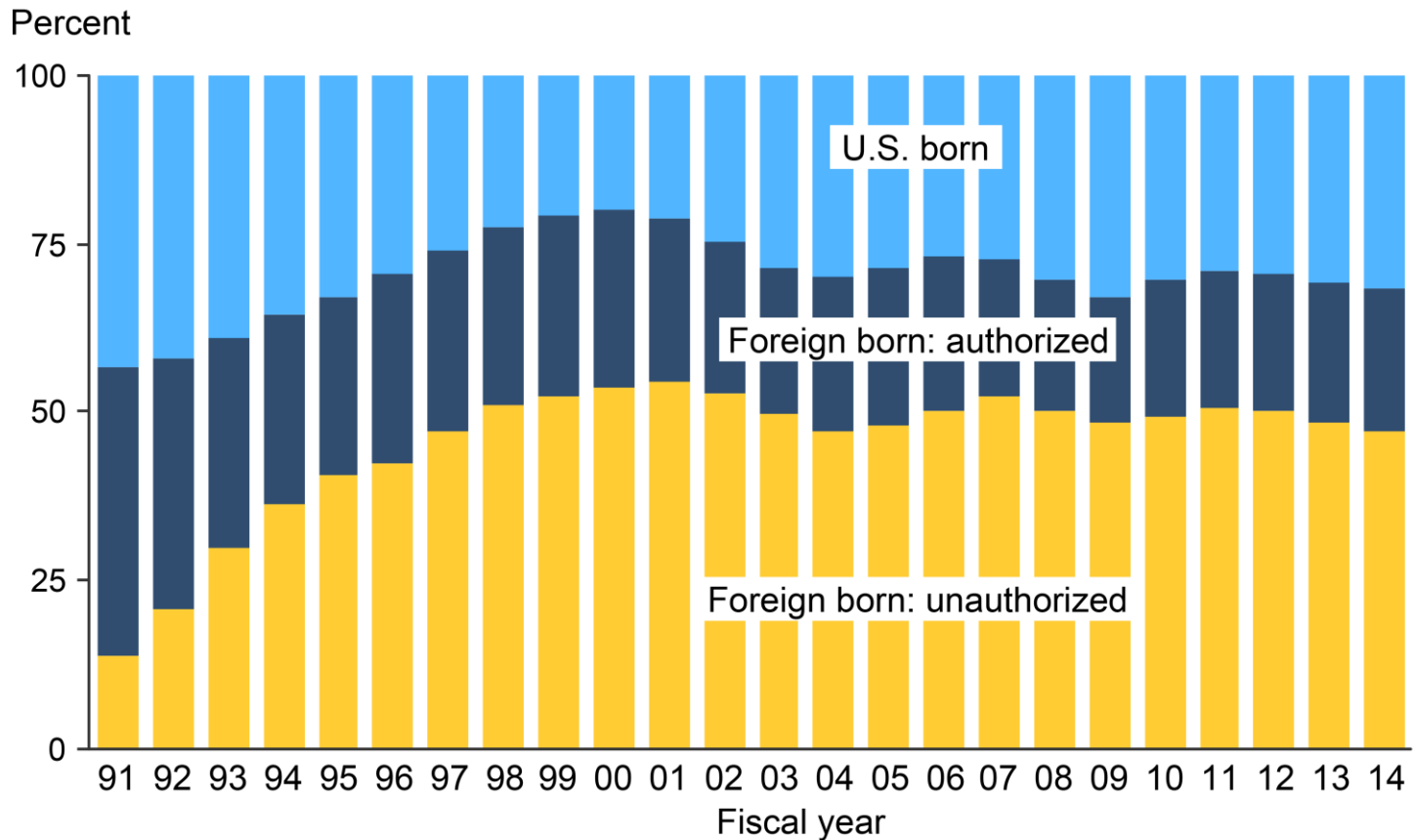
Labor costs as a share of total gross cash income for selected farm specializations, 2000-16



Source: USDA, Economic Research Service and National Agricultural Statistics Service, Agricultural Resource Management Surveys, selected years.

Legal Status of Farmworkers

Legal status of hired crop farmworkers, fiscal 1991-2014



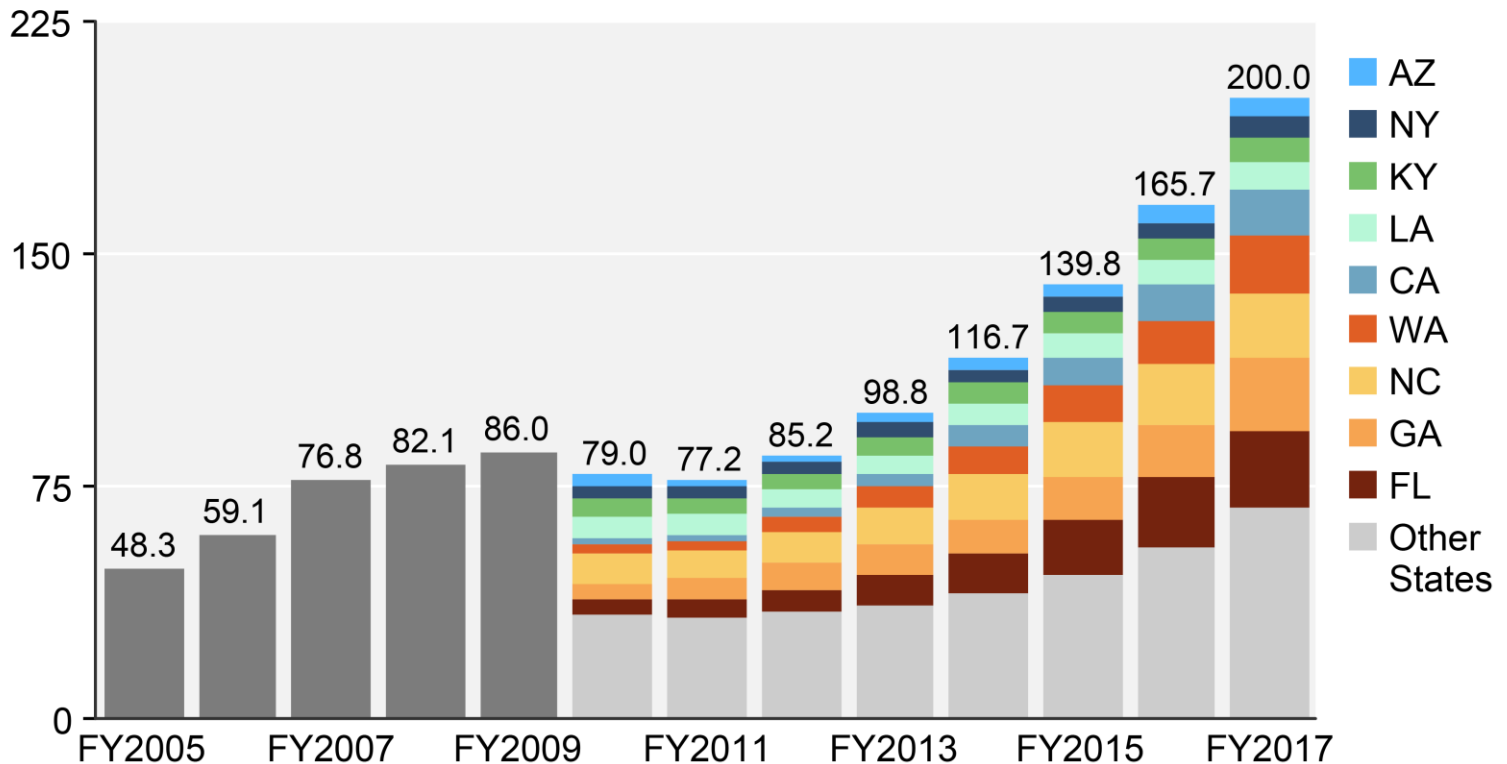
Note: Values for each year are 3-year moving averages to smooth fluctuations; e.g., data reported for fiscal 2014 are the average of fiscal 2012-14. U.S. born includes those born in Puerto Rico.

Source: USDA, Economic Research Service using U.S. Department of Labor, National Agricultural Workers Survey.

Temporary Farmworkers (H2-A)

H-2A positions certified by State, fiscal 2005-17

Seasonal positions certified (thousand)



Note: State-level data are not available in public documents for all States in all years. The States included in the chart had more than 2,500 H-2A positions certified in 2010; Arkansas met this threshold, but lacked data for 2015-17. Dark grey bars represent aggregates where individual State-level data are not identified (fiscal 2005-09).

Source: USDA, Economic Research Service using data from U.S. Department of Labor, Office of Foreign Labor Certification (OFLC).

Extreme weather

Hurricane Florence

- Sweet potatoes in North Carolina
 - Crop damage could range from 25-35% (or higher growing regions south and east).
 - Prices have already increased
 - NC sweet potatoes \uparrow \$2 = \$14-16 per carton
 - Rains could affect storage quality
 - Effects will be experienced for the next 12 months
 - Lower quality of stored sweet potatoes
- Lower impact for other crops in the western region of the state

Source: The Packer. North Carolina sweet potatoes take hit from Florence.

Food Safety Modernization Act (FSMA)

- Goal: Prevent food safety issues in the U.S. food supply from farm to fork
- Covers the entire food supply chain
 - Producers, processors, shippers, handlers, importers of produce sold in the U.S.
- Shifts focus from responding to contamination to preventing it
- Includes 7 rules:
 - Produce Safety Rule (PSR): Agricultural water quality standards and testing, standards for using raw manure and compost, training, control of domestic and wild animals, equipment, tools, buildings, sanitation as well as worker health and hygiene.



FSMA - Produce Safety Rule “Produce Rule”

- Standards for the growing, harvesting, packing, and holding of produce for human consumption
- Goal: regulate fresh produce marketed in the U.S. to ensure a safe food supply
- Exemptions:
 - Commodities rarely consumed raw or processing activities include a ‘kill step’ (e.g. cooking):
 - Pecans, sweet potatoes, some beans, asparagus, okra, eggplants, garden/sugar beets, collards, winter squash, sweet corn, food grains
 - Avg. annual Produce sales: < \$25K



Produce Safety Rule “Produce Rule”

- Qualified Exemption:

Avg. annual **Food** sales < \$500K

AND

> 50% of food sold directly to end-user (e.g. farmers markets, restaurants, and retailers in same state or within 275 miles from farm)

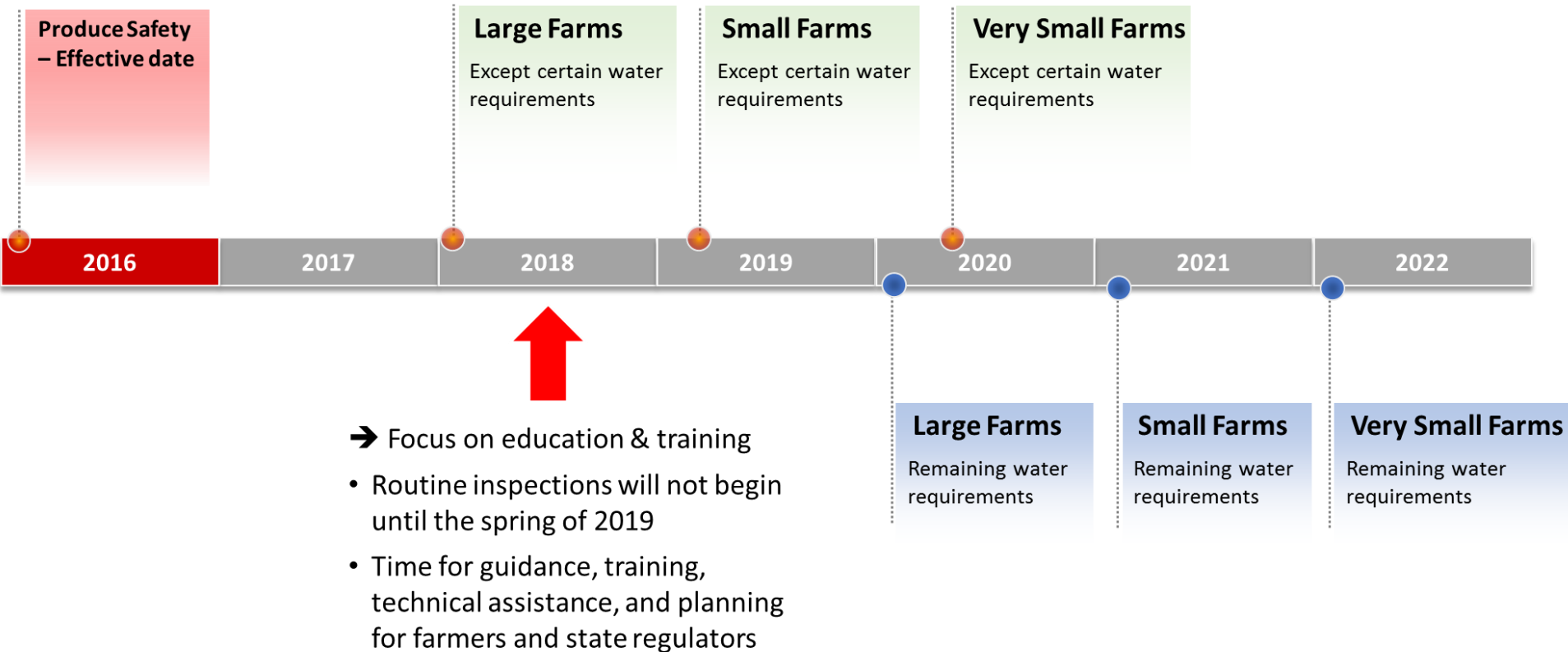


Must still meet some requirements:

- Disclose name and business address on the label of the produce at the point of purchase
- Producers need to establish and keep documentation

*Exemption may be revoked by FDA under certain conditions

Produce Safety Rule – Compliance timeline



What is the level of food safety practices adoption? - Implications

- Many regulated growers have already adopted GAP/GMP → the cost for these growers will be low

USDA-ERS report (Bovay, Ferrier, Zhen, 2018):

- Implementation cost: 0.3 – 6.8% of sales for small to large farms, respectively
 - Exempt farms will still incur in the cost of learning regulation requirements and documentation to support their exemption
 - Higher compliance cost for states with smaller produce-growing farms (e.g., Arkansas, Kentucky, Mississippi, Alabama)
 - ~3% of sales (compared to 0.6% in Arizona)



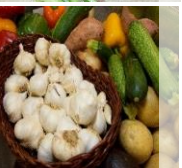
Produce rule and Harmonized GAP

- Alignment of the USDA Harmonized GAP Audit with the Produce Safety Rule
 - Make produce safety requirements more clear/accessible to growers
 - Farmers passing the USDA Harmonized GAP audit will have a greater likelihood of passing a FSMA inspection
- ➔ USDA audits are not a substitute for FDA or state regulatory inspections




Survey

- Online survey using Qualtrics
- Designed to answer questions about food safety certification, and how farmers felt about food safety practices
- Sent to producers in MS, AL, AR, LA
- Used different contact lists
- Incentivized by gift card drawing
- N=51



Reasons to not pursue a GAP certification (or other third-party audit)

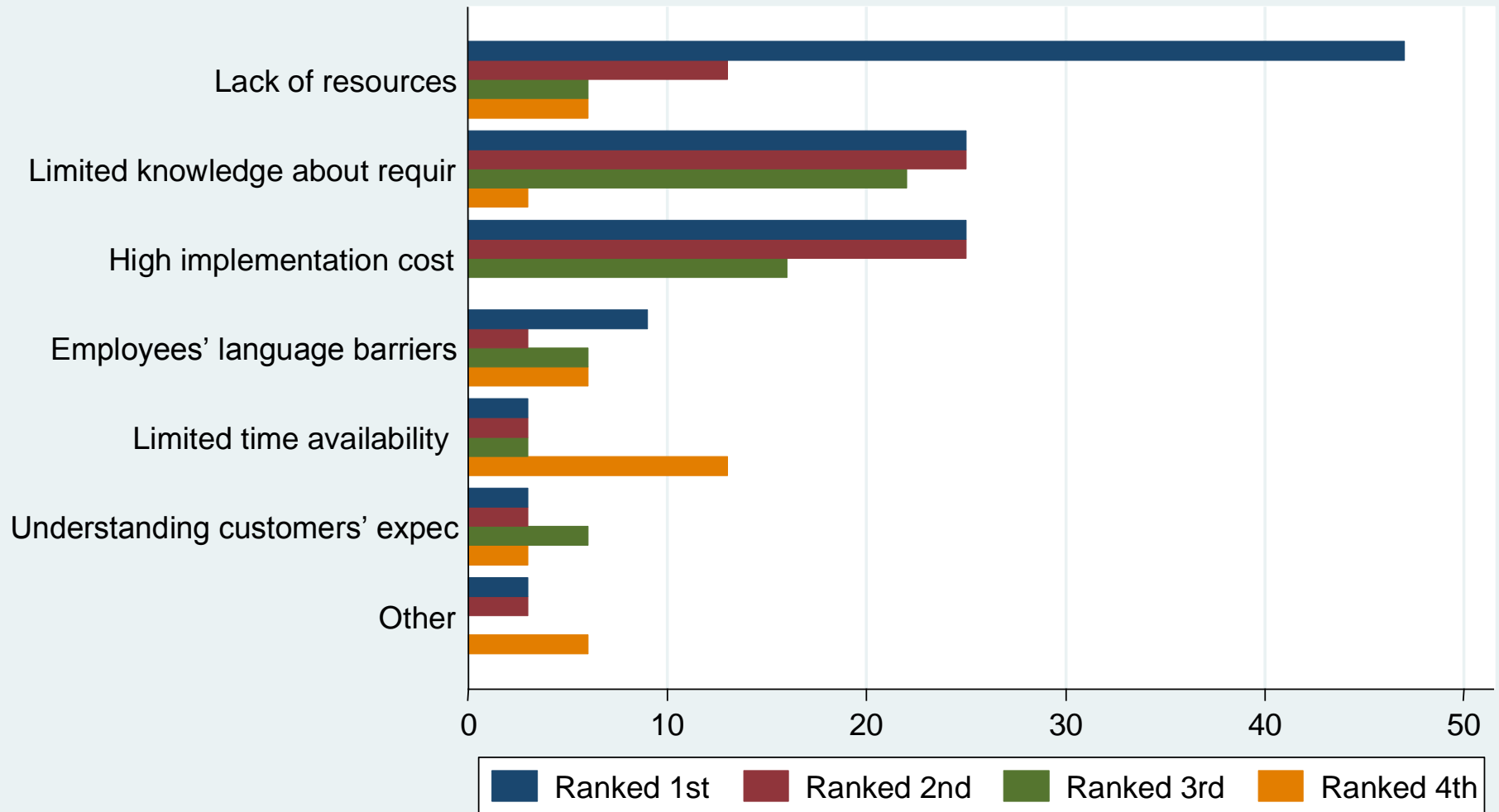


	Responses (%)
Small scale makes it unnecessary	42.8 %
Other	19.0 %
Not required by buyers	14.3 %
Lack of resources to implement	14.3 %
Not required by regulation	9.5 %

Farmers perceptions

	Disagree (%)	Agree (%)
Lack of certification has limited market access	50	50
Adopted practices because buyer requirement	53	47
Local products are safer	47	53
Food safety practices protect farm from food borne illnesses	16	84
Food safety certifications should not be required from small producers	58	42
Benefits of certification outweigh the cost	51	49

Challenges faced in implementing food safety practices



Educational needs identified by farmers

- FSMA updates and training
 - FSMA exemptions
 - Changes in the rules (specially water testing)
- Assistance with GAP certification
 - Understanding GAP requirements
 - Preparation for inspection
 - Practical on farm food safety





Thank you!

Questions?