

Increasing Organic Production: Where Are We Headed?

David Granatstein
Elizabeth Kirby

***WSU-Center for Sustaining
Agriculture and Natural Resources
Wenatchee, WA***

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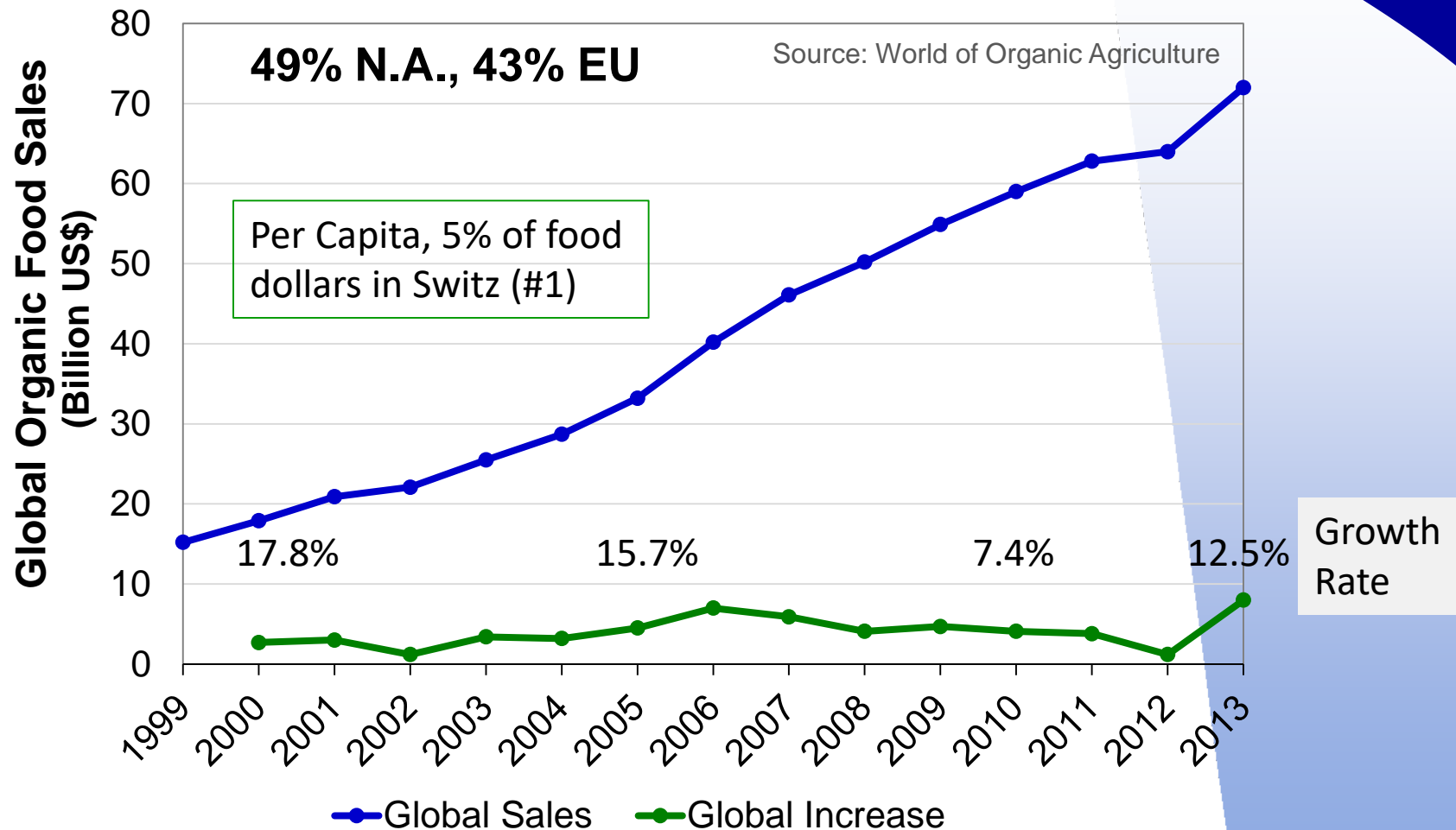


In cooperation with Washington State
Department of Agriculture Organic Food
Program and Oregon Tilth Certified Organic



The organic food sector continues to be driven by growth in consumer demand. Both global demand [slide 3](#) and U.S. demand [slide 4](#) have continued to grow at 10-12% per year recently. A recent market analysis has forecast annual growth of 12.7% from 2014-2019. North America accounts for about 49% of global organic food sales, and Europe 43%. Switzerland is the country with the highest per capita share of food dollars spent on organic, at 5%. Thus, there is still tremendous growth potential.

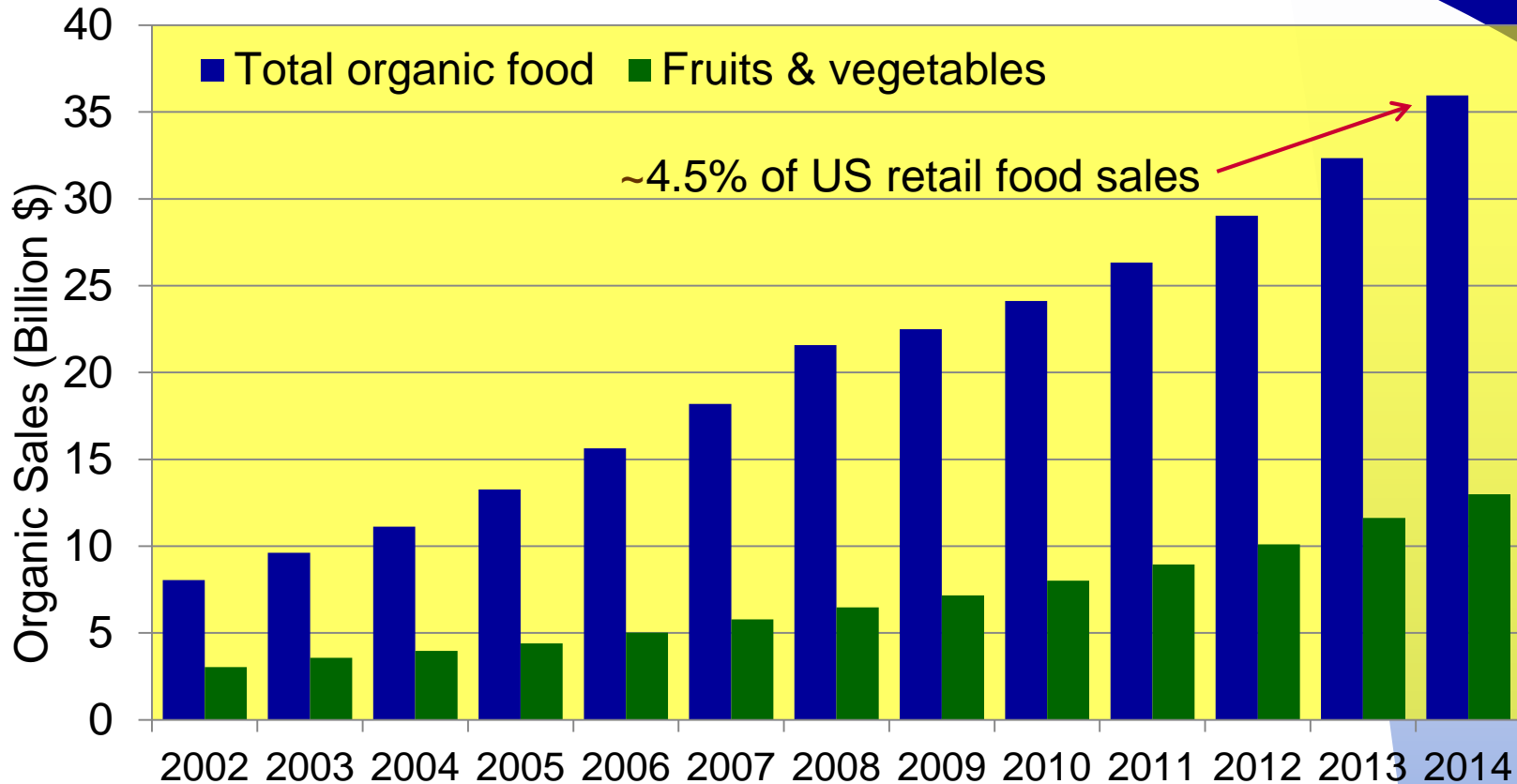
Consumer Demand for Organic Food



Forecast global growth 2014-2019 = 12.7%/yr

Consumer Demand

Growth of US Organic Food Sales



Retail organic food sales increased **11.2%** in 2014.
Organic fruits and vegetable sales increased **11.7%**
and were **36%** of all organic food sales; **~7%** of all fruits
and vegetables sales (\$) in U.S. in 2014 were organic.



Produce is a key organic food purchase, and is an entry point for many consumers. For fresh fruit, the top four fruits by sales value in the U.S. for organic are the same as for conventional [slide 6](#). Apples are #2, and represented 24% of all fresh organic fruit sales in 2015. Organic fruit sales expanded rapidly at a large U.S. retailer in 2015 [slide 7](#), with apples increasing 48% over the previous year and tropical fruit up 108%. Growth for all organic produce at this retailer ranged from 17-27% from 2012-2015, outpacing the overall U.S. organic sales growth.

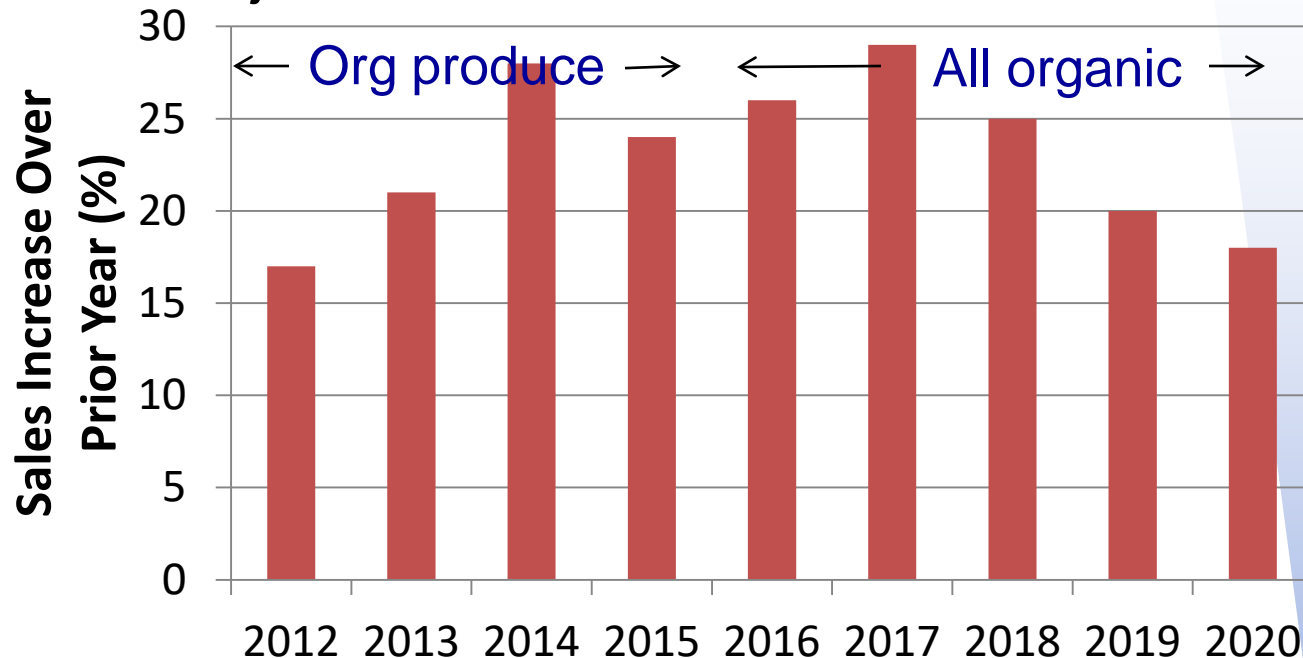
Top U.S. Fresh Fruits (dollar sales)

Organic		% of sales	Conventional		% of sales
1	Berries	35.8	1	Berries	19.9
2	Apples	24.3	2	Apples	13.5
3	Bananas	12.6	3	Bananas	10.9
4	Grapes	8.3	4	Grapes	10.9
5	Avocados	4.0	5	Melons	9.2
6	Oranges	3.3	6	Citrus	7.9
7	Pears	2.3	7	Avocados	6.4
15	Cherries	0.5	8	Cherries	2.5
			13	Pears	1.9

Data source IRI/Freshlook Marketing. Weeks ending 11/1/15

Organic Sales

Past and projected growth of organic sales for a major US retailer



Annual organic fresh fruit sales increase, 2015:
Berries, 29%; Apples, 48%; Tropical fruits, 108%

2015 US sales: Conv apple, -4.9%; Org apple, +13.7%

Processor markets for organic fruit have been important in maintaining a “floor” price. Demand for organic processed products, and thus the ingredients for them, has increased along with demand for fresh fruit. Juice and peelers have been traditional markets for organic apples, but the development of pre-sliced fresh apple products has created a new opportunity. Currently this market is disproportionately skewed towards organic fruit [slide 9](#).

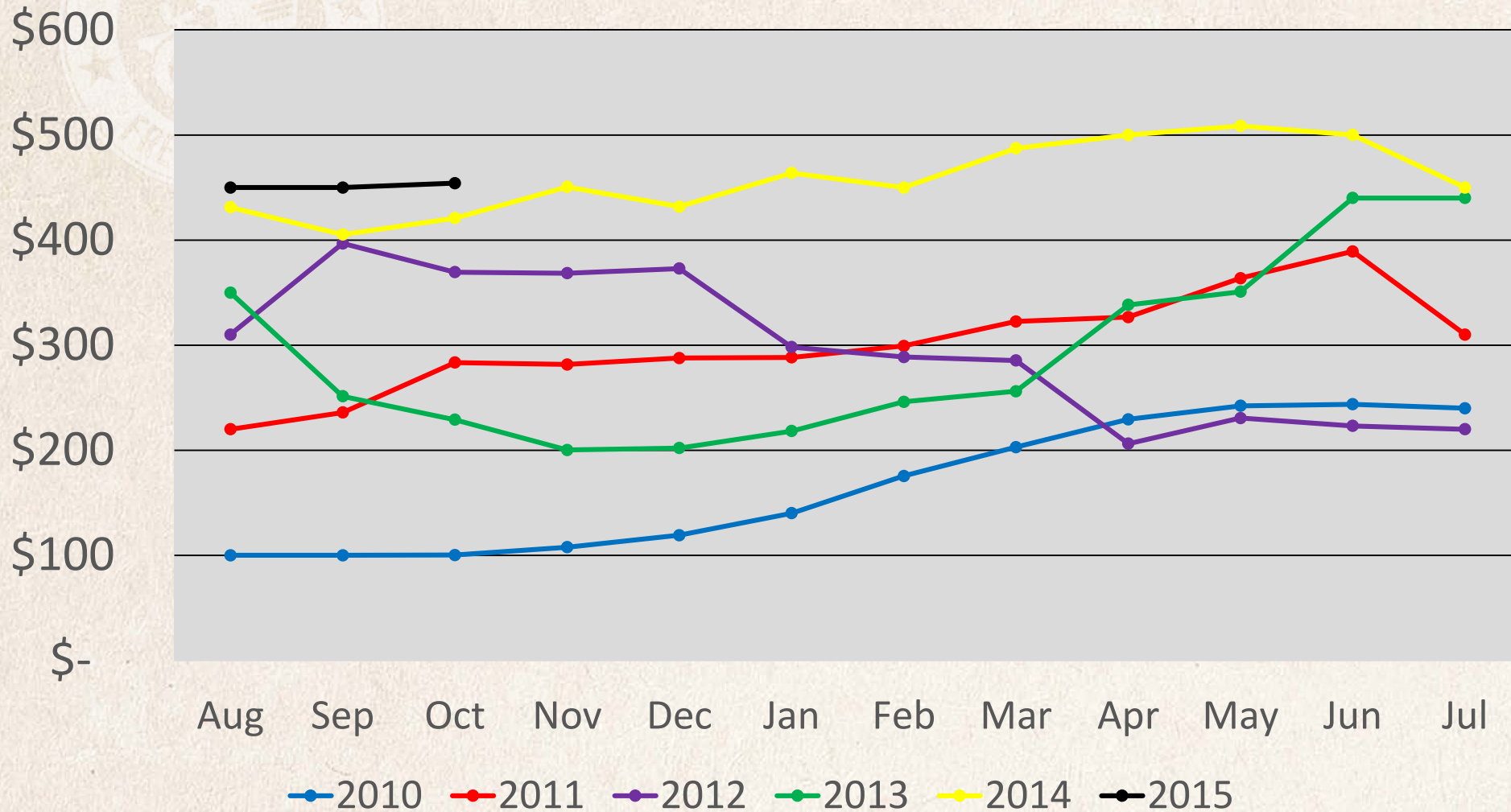
Organic juice prices reached near record highs in 2014 [slide 10](#) and were encouraging companies to look for less expensive sources from overseas. Another concern is the ratio of varieties that provides the right mix of fruit for blending. With about half of organic apples consisting of Gala and Fuji, the ratio may not be ideal for optimal utilization.

One major processor said they have seen sales of their ingredients decline since 2013 as prices for raw fruit continued to rise [slide 11](#). Growers have reported that there are new buyers in the processor market and that they have had no problem selling their fruit for good prices.

Processor Market

- Demand for processor fruit is rising; juice, puree, frozen, sliced
- Need a mix of varieties; too much Gala and Fuji?
- Prices may be near a ceiling; processor premium (250-1000%) is greater than fresh (30-95%); companies importing more foreign fruit
- Organic is 1/3 of Crunch-Pak volume; sales up 21% over last year, would be higher but currently supply constrained; price is a factor

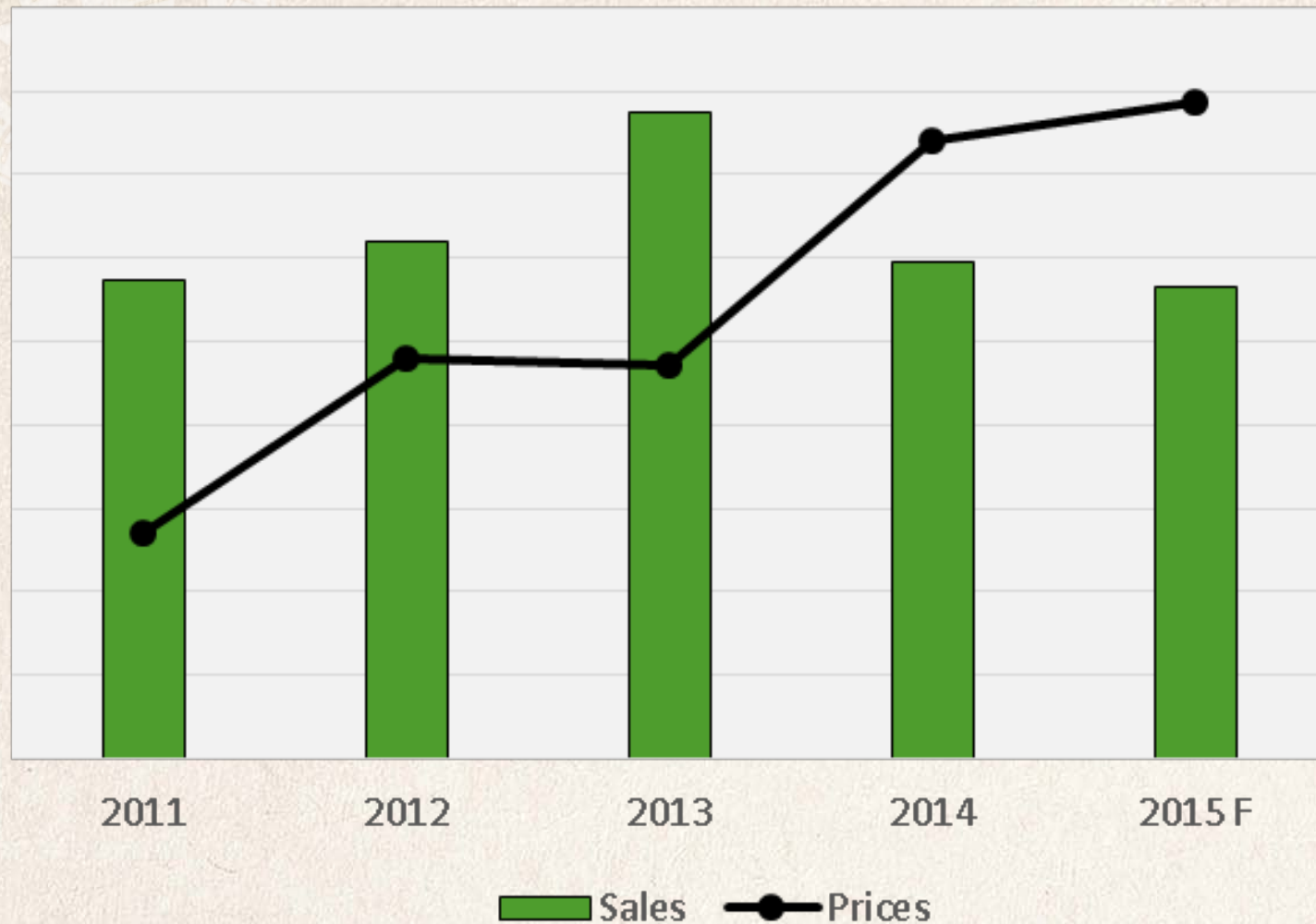
Organic Juice \$/Ton



Source: Tree Top



Sales vs. Raw Fruit Prices



While area of production does not always translate into the amount of production, it is a more accessible indicator of trends in organic tree fruit. Data are collected annually by FiBL/IFOAM. Based on those data, apple had the largest area of organic tree fruit in 2013 and had experienced 165% growth in area since 2008, compared with 13% growth in area for all apples worldwide. This same pattern was evident for other tree fruit crops [slide 13](#). Even with that growth, organic only represented 1.8% of global apple area.

The apple area growth can be seen graphically in [slide 14](#). Europe has been the dominant region, with Poland a major factor there [slide 15](#). However, much of this area was planted for subsidy payments and is not expected to produce a significant volume of fruit. Data from China were obtained in 2013 for the first time in years and indicated some 16,000 ha under organic management (certified to China standard, to foreign standard, or in transition).

The area of other organic temperate tree fruits has grown more slowly [slide 16](#).

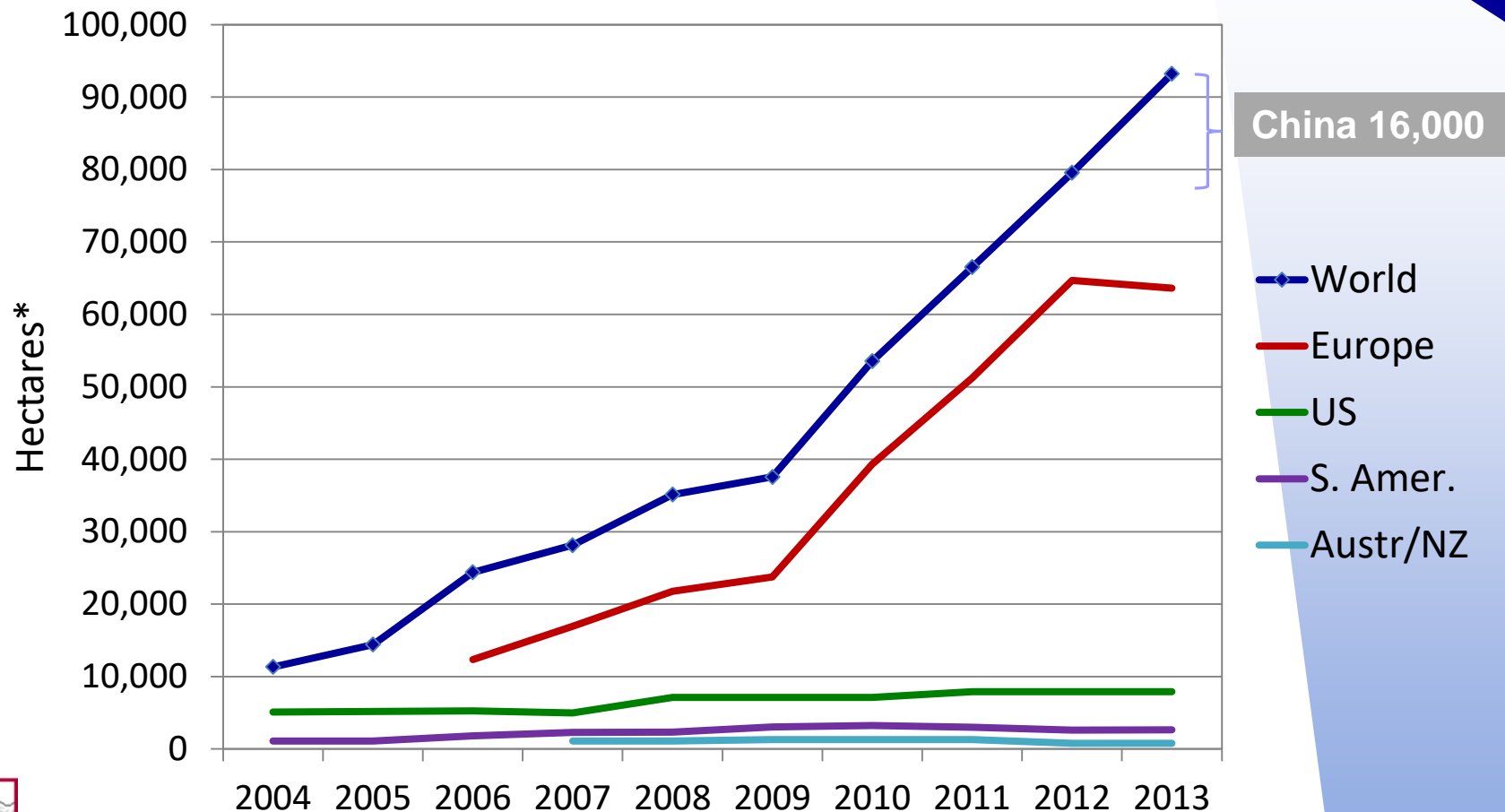
Global Organic Tree Fruit Area

	Hectares* 2013	% change from 2008		% of organic category	% of all global
		<u>Org</u>	<u>All</u>		
Apple	93,219	165	13	44	1.8
Apricot	22,282	108	4	10	4.4
Pear	16,925	145	12	8	1.0
Plum	10,420	29	7	5	0.4
Cherry	9,299	28	9	4	1.5
Banana	79,927	43	6	39	1.6
Orange	42,420	48	1	52	1.0

*certified + transition

Organic apple area increased by 165% since 2008, while all apple area only grew 13%. Organic apple area was 44% of global organic temperate fruit, and 1.8% of global apple area (all).

Organic Apple Trends Expansion of Global Area



*Certified + Transition acres

Data courtesy of H. Willer, FiBL

World Organic Apple Area

	2013 Ha (C+T*)	% change from 2012	1000 MT Production
World	93,219	+17	
US	~7,900	?	200?
Europe	63,609	-1%	180
Poland	>50,000	++	?
Germany	>4,700	?	50
Italy	3,586	-10	80
France	5,770	+6	10
Turkey	3,804	+19	
China	16,432	?	130
Argentina	1,509	+3	17
Chile	1,118	+1	
New Zealand	450	?	

WA organic apples, 2014

- 5,688 ha cert.
- ~70% of US
- ~45% of world
certified area (2012)

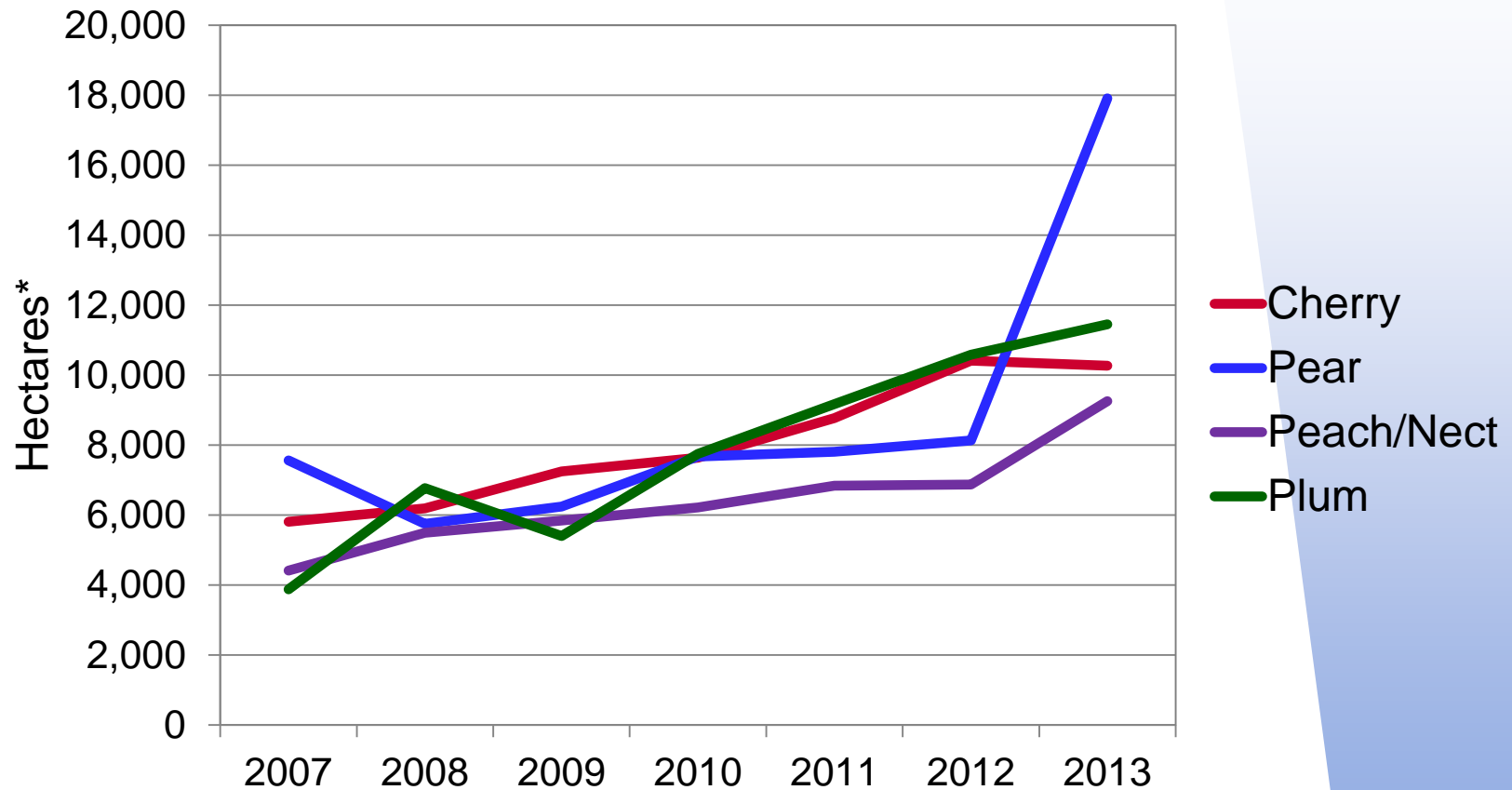
Europe is the leading
region for organic tree
fruits.

- ~70% of world
organic apple area

*C+T = certified + transition

Data courtesy of H. Willer, FiBL

Organic Tree Fruit Trends Expansion of Global Area



*Certified + Transition acres

Europe is the leading region globally for organic tree fruit area. There has been a concerted effort to become more self-sufficient in organic apple production, which has largely succeeded. Surprisingly, scab-resistant apples (scab is the major barrier to organic production) do not represent the majority of the area [slide 18](#).

Price patterns for organic apples in Germany relative to conventional look similar to those in Washington State [slide 19](#). Italy and Germany are the largest producers. Based on data from 6 countries (not including Poland), production from western Europe is slightly less than that from Washington State for organic apples, and considerably less for organic pears [slide 20](#).

Europe Organic

23 different organic apple varieties tracked

<u>2014</u>	<u>% of crop</u>
Gala	13.9
Golden	9.7
Topaz	9.2
Elstar	8.6
Braeburn	8.5

Apple prices, 2010-2014

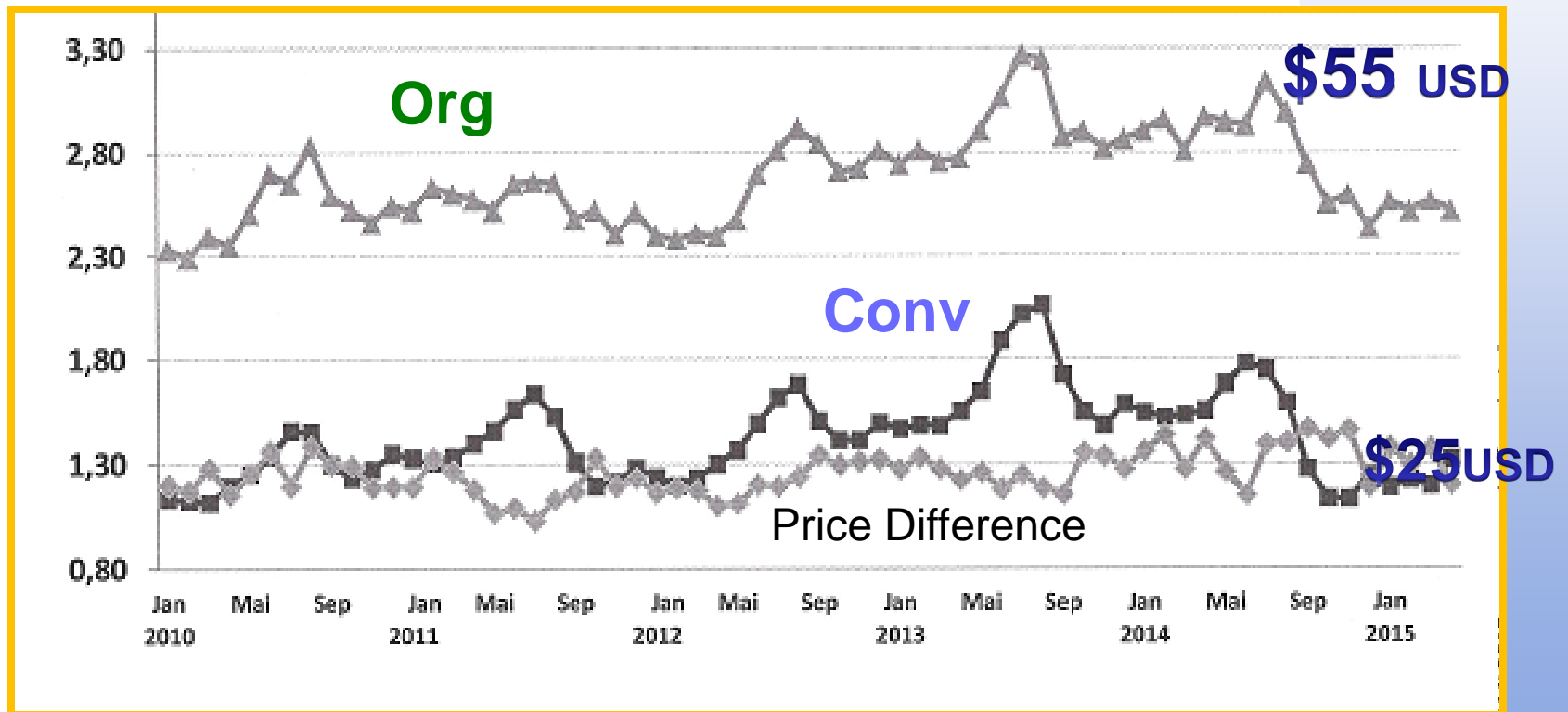
IFP 0.55-0.82 eu/lb

Organic 1.09-1.45 eu/lb

1 euro = 1.05-1.45 US\$

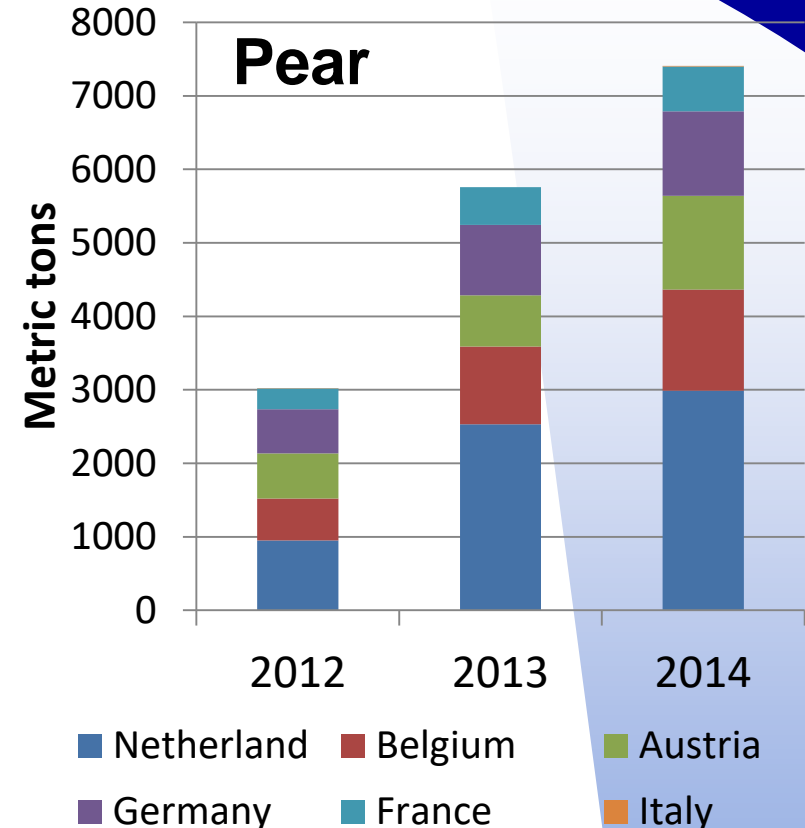
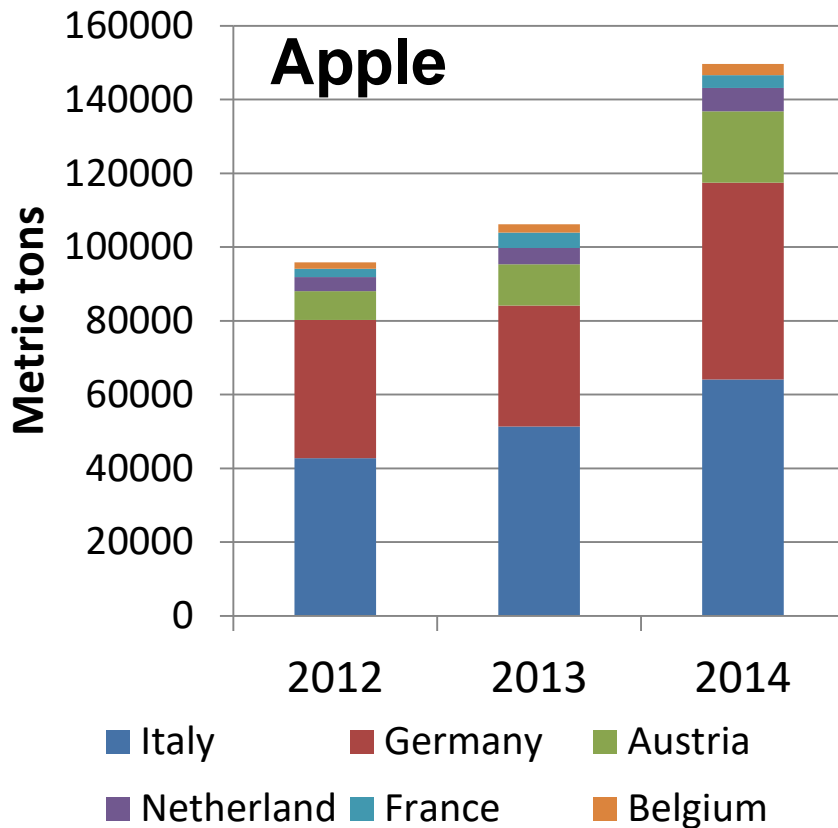
\$2.95/lb org Idared in grocery

Germany 5 Year Apple FOB



(Source: AMI)

Europe Organic



2014
Apple
Pear

Europe
8.23 mil
8,146

WA
9.56 mil
24,048
boxes
tons

Some data on other organic tree fruit producing countries is provided in the next slides.

China could be a large producer but is not likely to impact the European or North American markets for a while [slide 22](#) .

Organic apple production is expanding in Chile as profitability of conventional production declines. However, older orchards often being converted do not produce the best fruit [slide 23](#).

Organic apple production declined substantially in New Zealand and will probably not rebound soon as growers focus more on high-value club varieties. Still, NZ organic apples help fill important market niches overseas during spring and summer [slide 24](#).

China Organic Tree Fruit

- “Organic Industry Development Report of China”
- Certification and Accreditation Administration of China (CNCA)
- Combines China standards and foreign standards
- Increased interest by government and private sector to invest in organic

	Organic Area (ha)		Production (1000 MT)	
	<u>Total</u>	<u>Cert</u>	<u>Total</u>	<u>Cert</u>
Apple	16,432	5,500	289	130
Apricot	11,753	8,200	50	16
Pear	4,632	2,300	88	70
Peach/nectarine	2,158	1,100	20	5
Cherry	??			
Plum	??			

Chile

- Apples second highest organic export value
- 1.44 mil box (26,100 MT) exported in 2013.
Price premiums 40-80%
- ~1500 ha apples in conversion, also some cherries; losing money on conv apples
- Organic tends to be older strains; problems with color, size
- Targeting our spring/summer Gala market; could also do Honeycrisp
- Exporting organic apple juice, puree

New Zealand

- NZ has lost over ½ of organic apple acres; not likely to come back
- Focus now on club varieties
- Saw NZ organic Galas being repacked in June 2015 by German fruit company; their supply had run out; stores want organic Gala year-round

Accurate data on organic tree fruit area and production for the entire U.S. are lacking. The 2014 NASS organic survey did not capture all the data; only 63% of organic farms participated. Earlier certifier surveys by USDA-ERS provided more accurate information, but only detailed a few fruit crops, including apple. It is clear that the western U.S., particularly California and Washington, dominate the production of organic temperate tree fruits [slide 26](#). Data from the 2014 USDA AMS report on fresh fruit and vegetable shipments confirm this. Washington State produced 99% of the nation's fresh organic apples and cherries that year, and 94% of the fresh organic pears [slide 27](#).

US Organic Tree Fruit

2014 NASS data – incomplete, some errors.

Tree nuts, fruits, berries, grapes

NASS 2014	114,409 ac
ERS 2011	154,716 ac

Apples

16,087 ac
19,542 ac



- Generally >90% of organic apples in western US.
- Likely exceeds 20,000 ac
- Cannot accurately track national growth with current data.

	WA as % of US	
	<u>acres</u>	<u>production</u>
Apple, fresh	67	93
Pear	59	79
Cherry, sweet	75	94

Organic Share of Fresh Tree Fruit Production (lbs)

	Organic as % of U.S. total	Organic as % of WA total	WA share of U.S. organic production
Apple	5.4	6.6	99.1
Pear	4.4	6.7	94.5
Sweet cherry	2.2	2.6	99.2

Data are for 2014 calendar year, fresh shipments only; domestic plus export. USDA Agricultural Marketing Service report , “Fresh Fruit and Vegetable Shipments”, FVAS-4. February 2015.

Organic tree fruit area in Washington peaked around 2009 and has declined slightly for several years [slide 29](#). The pattern began to change in 2013 and growth is expected to accelerate. These data come directly from certifiers and are audited annually during the farm inspection process.

Despite relatively flat area, the dollar value of organic apples has continued to climb in recent years, due to high prices and increasing shipped volumes [slide 30](#). The trend for pears is more muted. These results represent the value of the packed fruit FOB at the fruit company.

The pattern of growth of organic apple area in WA is shown in [slide 31](#). It has proceeded in a step-wise pattern rather than a smooth upward trend, likely due in part to the lag created by the 3-year transition requirement. A similar pattern has occurred in Europe.



Organic Tree Fruit Acres Washington State

	--- Certified acres ---				% Change	Transition acres	
	2012	2013	2014	2015	14-15	2014	2015
Apple	13,657	14,030	14,052	14,279	1.6	783	3,356
Pear	1,900	1,820	1,843	2,046	11.0	84	165
Cherry	1,792	1,837	1,939	2,056	6.0	57	156
Apricot*	266	285	298	260	-12.7	--	--
Peach&Nectarine	1,106	1,058	1,021	948	-7.2	--	11
Plum&Prune*	89	64	58	56	-3.4	--	--
Mixed stone	45	7	16	32	--	--	0
Total*	18,855	18,941	19,228	19,677	2.3	924	3,688

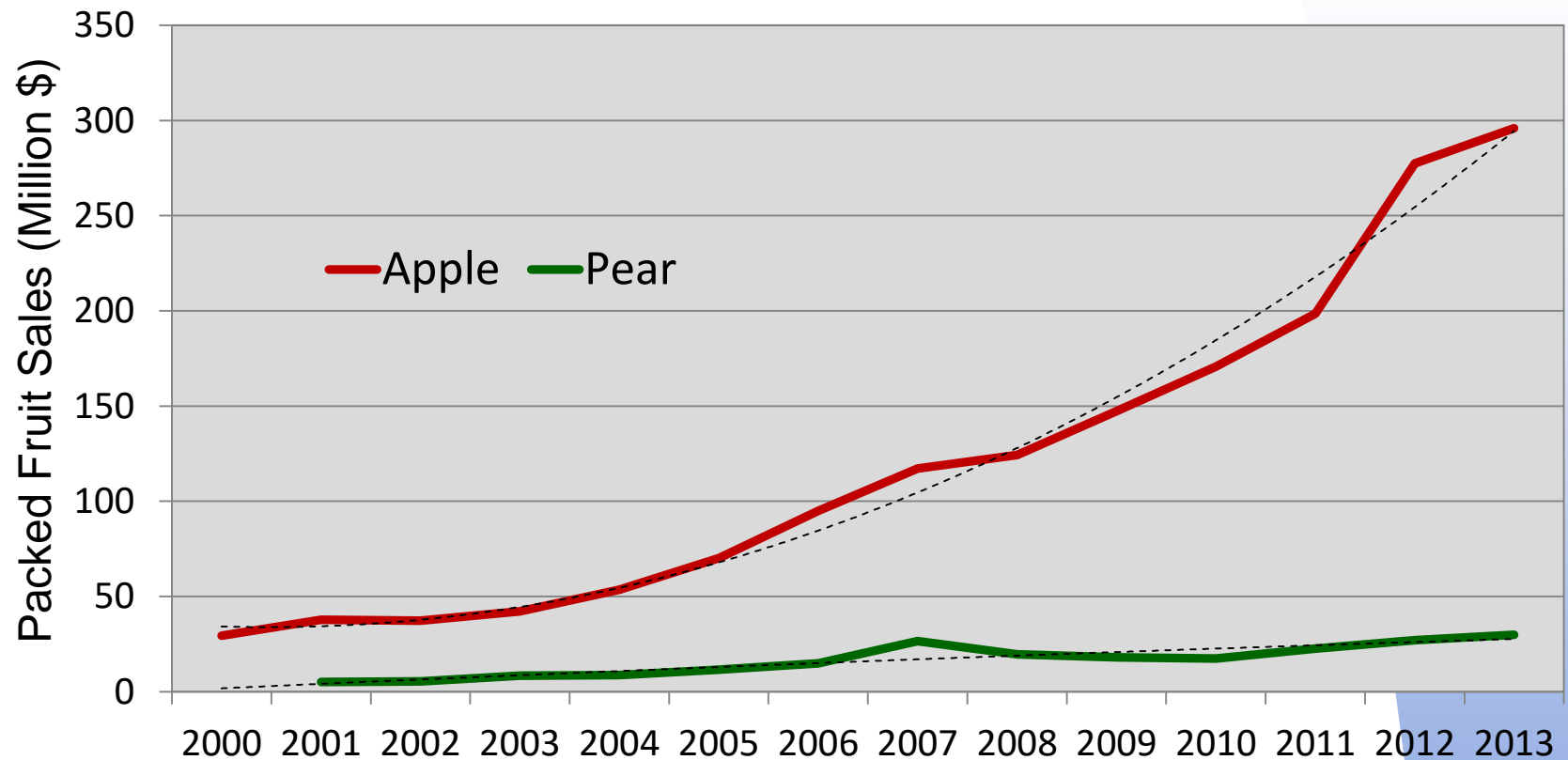
**apricot includes aprium; plum includes pluot and plumcot; totals do not include mixed tree fruit*

Apple acres in transition are a 23% increase in area.

Combined certifier data



Value of WA Organic Apples and Pears

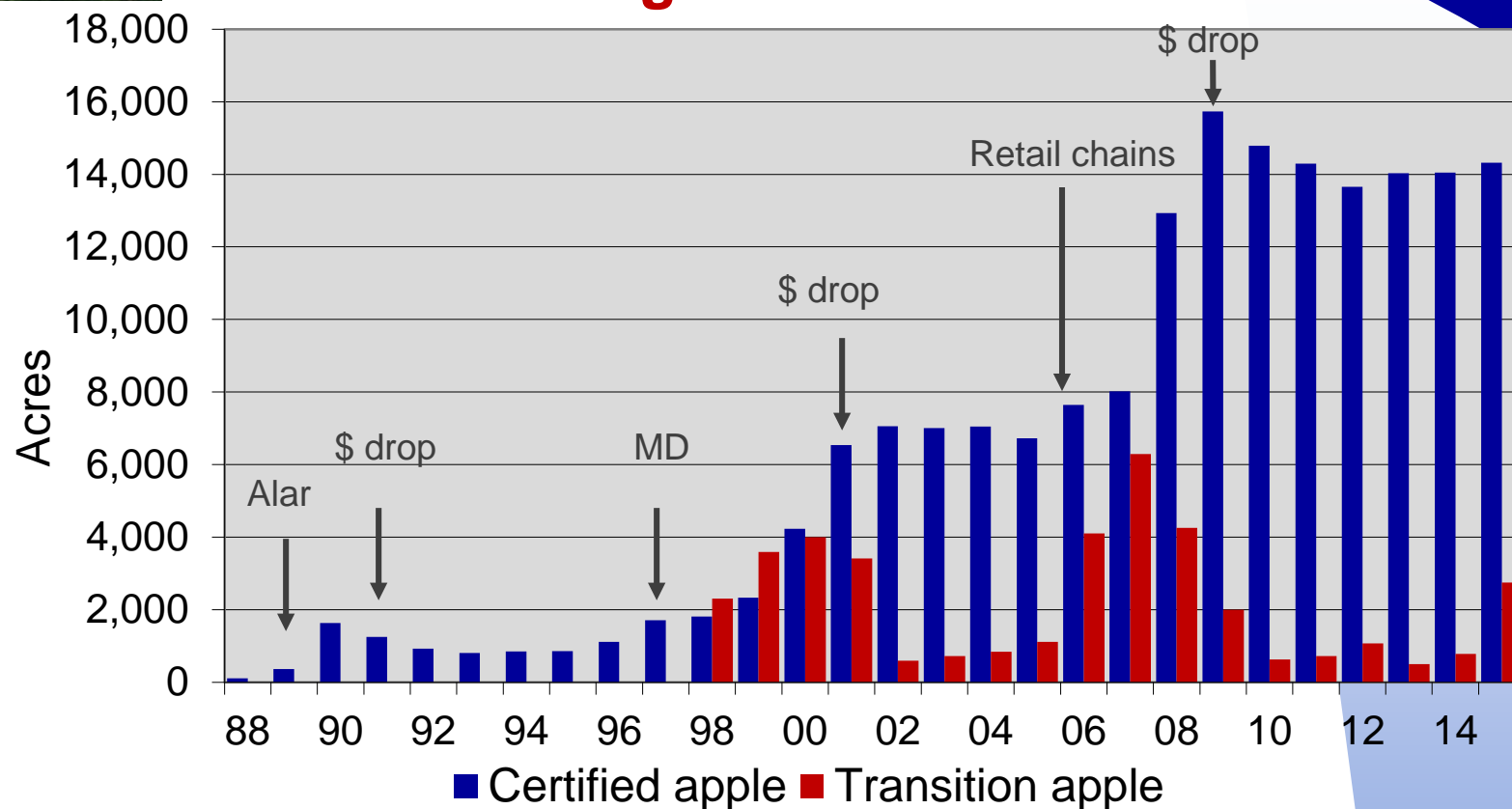


Based on shipped volume for the crop (e.g., 2008 harvest was shipped in both 2008 and 2009) and estimated weighted average price per packed box during the same period. Dashed line is polynomial trend line estimate. Does not include processed fruit.

Data: Washington Growers Clearing House, Wenatchee Valley Traffic Assoc.



Organic Apple Acreage Washington State



14,279 ac = ~9-10% of WA apple bearing acreage
(based on 2013 WA-NASS estimate of 148,000 bearing acres)

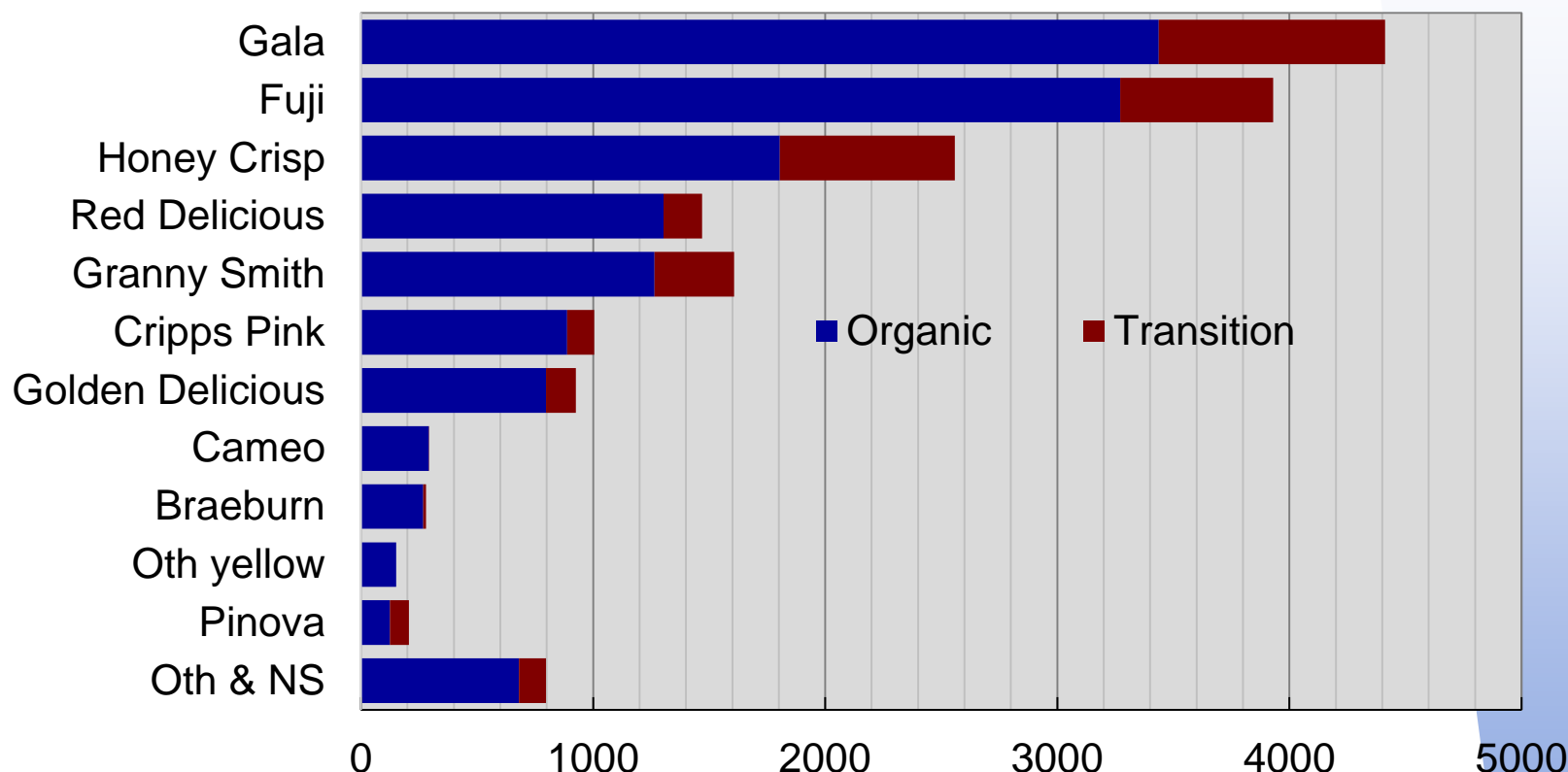
Some historical events that have influenced organic apple production include the Alar incident, price volatility (\$ Drop), the introduction of mating disruption (MD) for codling moth control, and market entry by national chain supermarkets (Retail chains).

Gala and Fuji varieties account for nearly half the area of organic apples in WA [slide 33](#). Honeycrisp has grown the most in area in recent years [slide 34](#). Demand for Golden types has been slowly declining in the fresh market [slide 35](#), but there have been good processor markets. Many other varieties are grown on smaller areas.



WA Fuji; ARS Photo

Organic Apple Variety Acres Washington 2015



Fuji and Gala = 47% of certified apple acres;
Honeycrisp tops Red and Granny since 2013

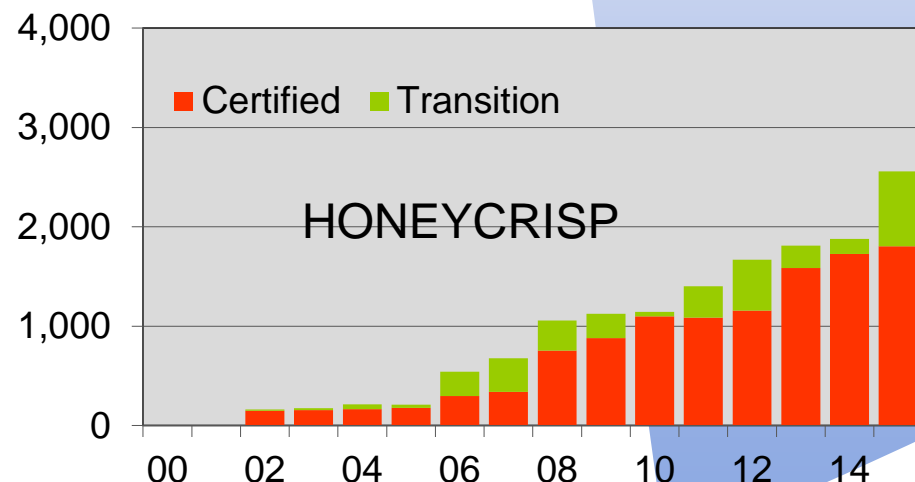
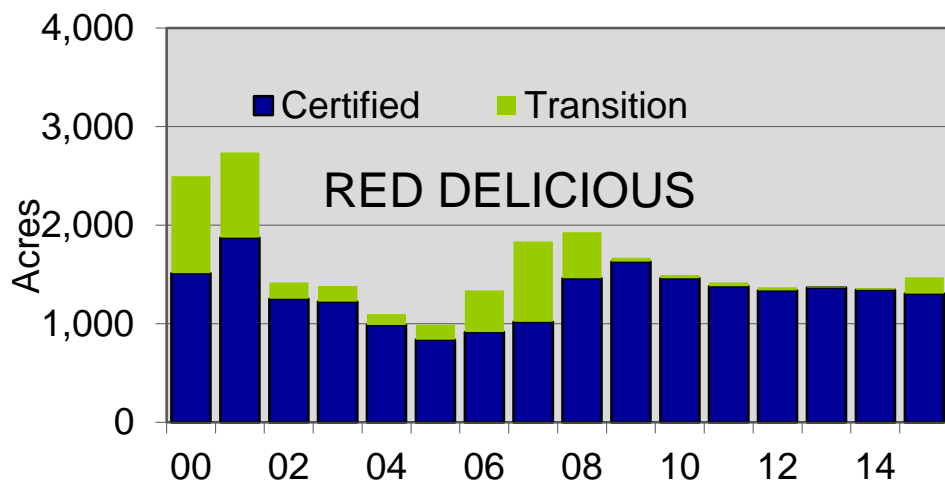
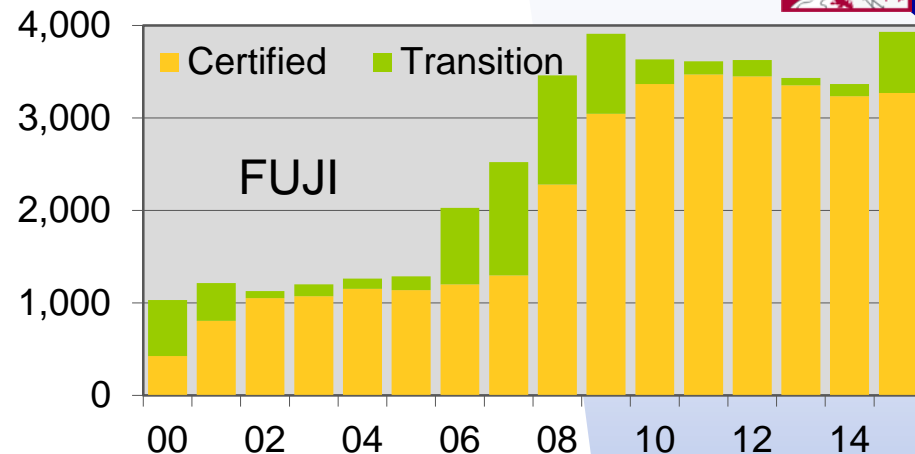
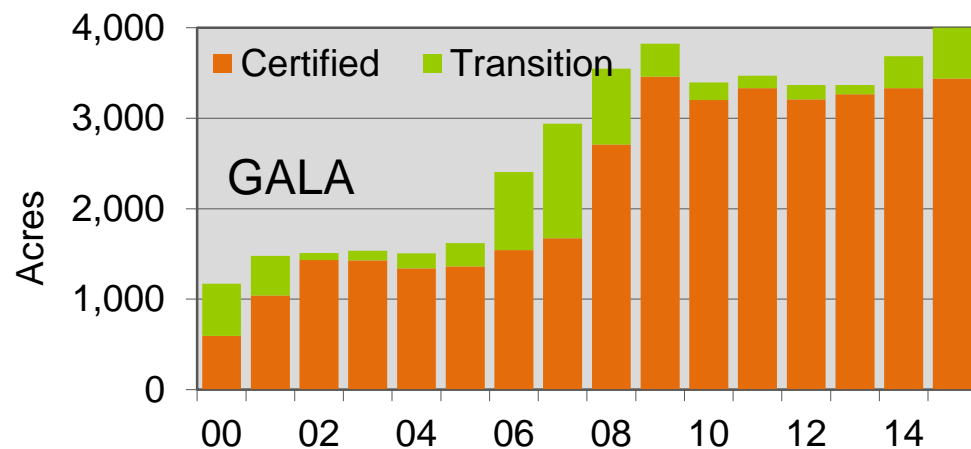




Photo: B. Barritt

Organic Apple Varieties

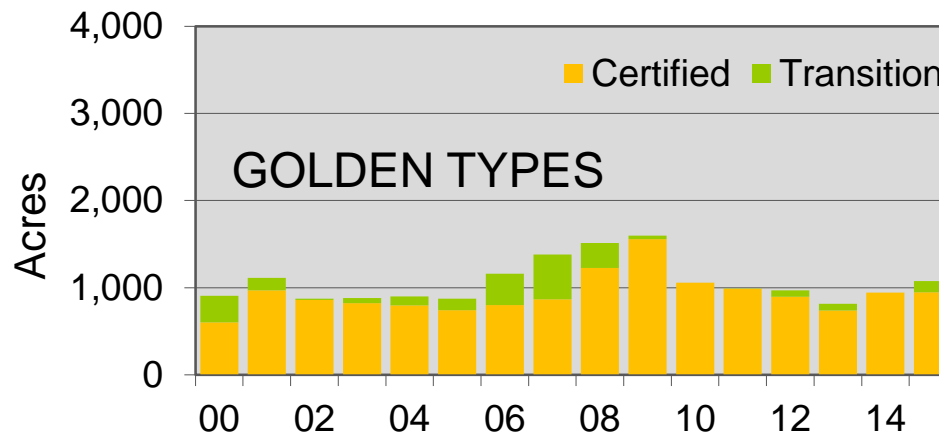
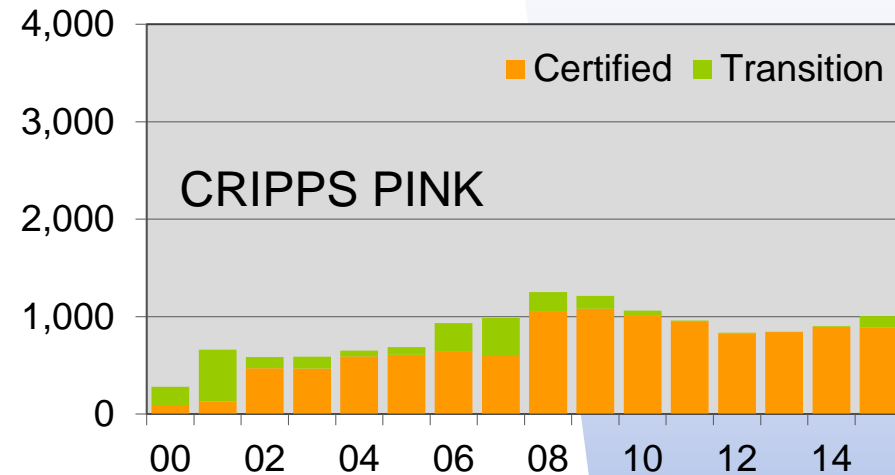
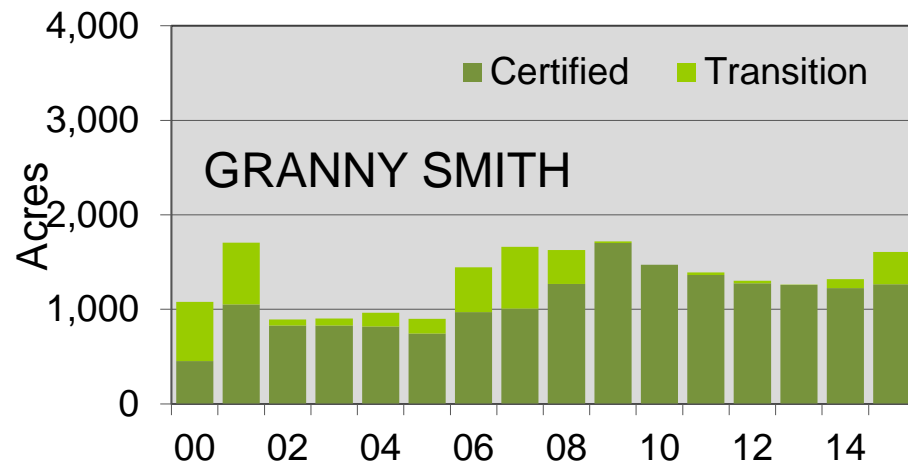
Washington State Acres Trend



Organic Apple Varieties Washington State Acres Trend



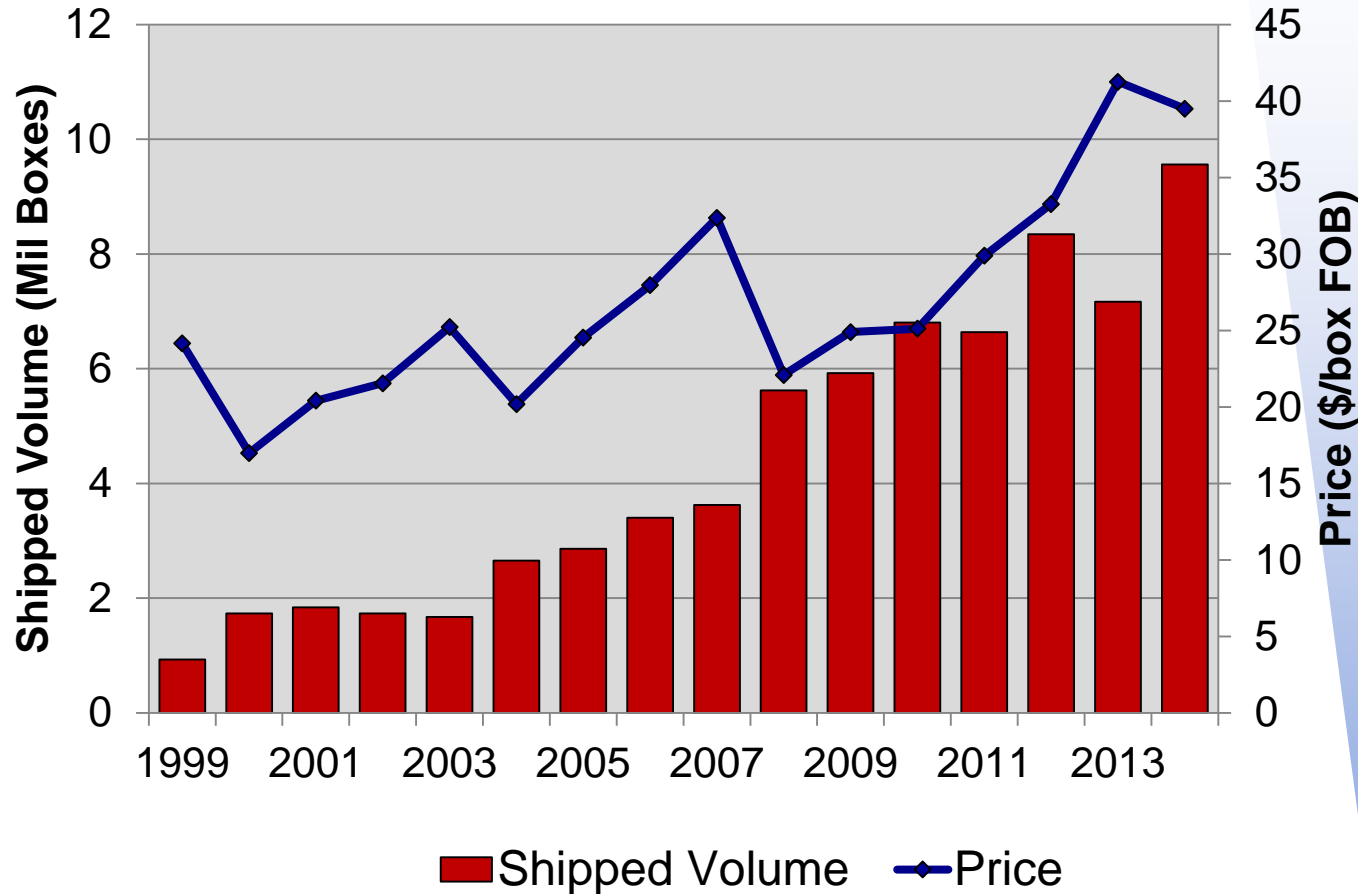
Photo: ARS



Volumes of organic apples shipped from WA fruit companies have increased dramatically over the past 7 years [slide 37](#), despite some years of declining acres. This can be explained by yield increases from more modern high-density plantings, and less fruit being diverted to conventional fresh markets or organic processor markets. A clear pattern of alternate bearing has emerged since 2009 and needs to be accounted for in production projections. Despite the steep increase in volume, average prices (all varieties, all grades, all markets) for fresh fruit have also increased, suggesting that the market is not yet mature and demand generally exceeds supply. Comparisons of average prices for WA apples, conventional and organic, over time are shown in [slide 38](#) for Gala and Fuji. The lines generally move in the same direction from year to year, likely driven by crop size. But the gap between the lines, representing the organic premium, has varied and has increased in the past few years to record levels.

Organic Apple Sales

Volume and Price Trends - WA

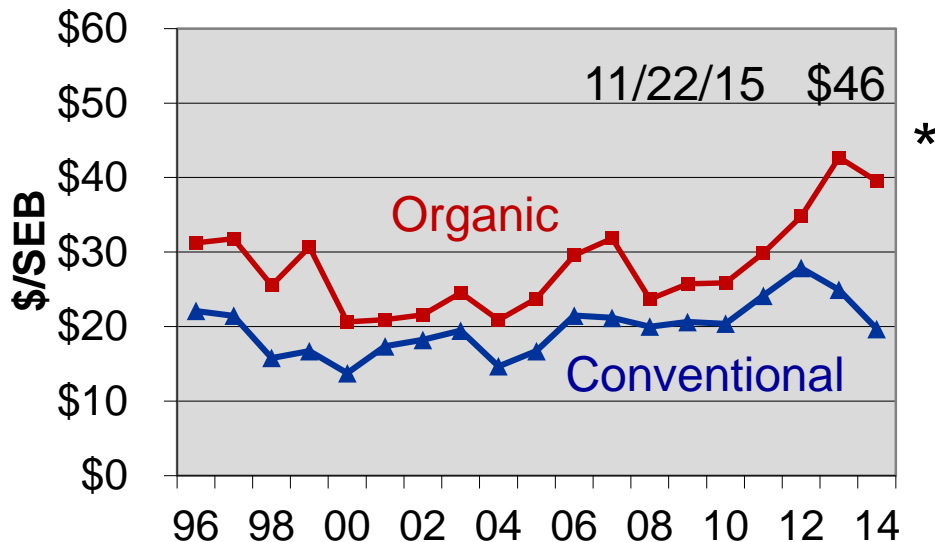


40 lb box. Data: Wenatchee Valley Traffic Assoc.; Washington Growers Clearing House; WSTFA; organic season average FOB history; priced boxes all grades, sizes, storage

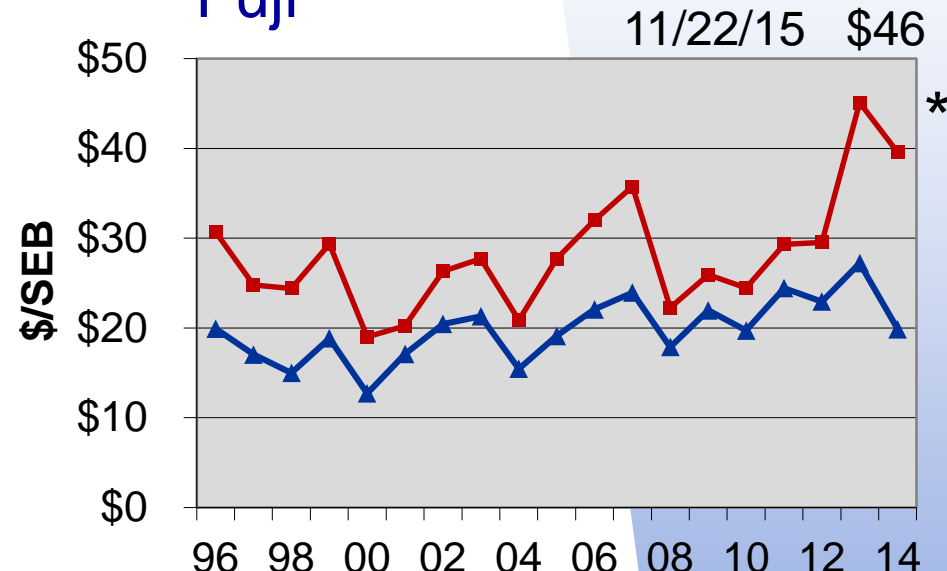
Price Trends Washington Apples

- 2015 prices \$3-8/box above last season to date

Gala



Fuji



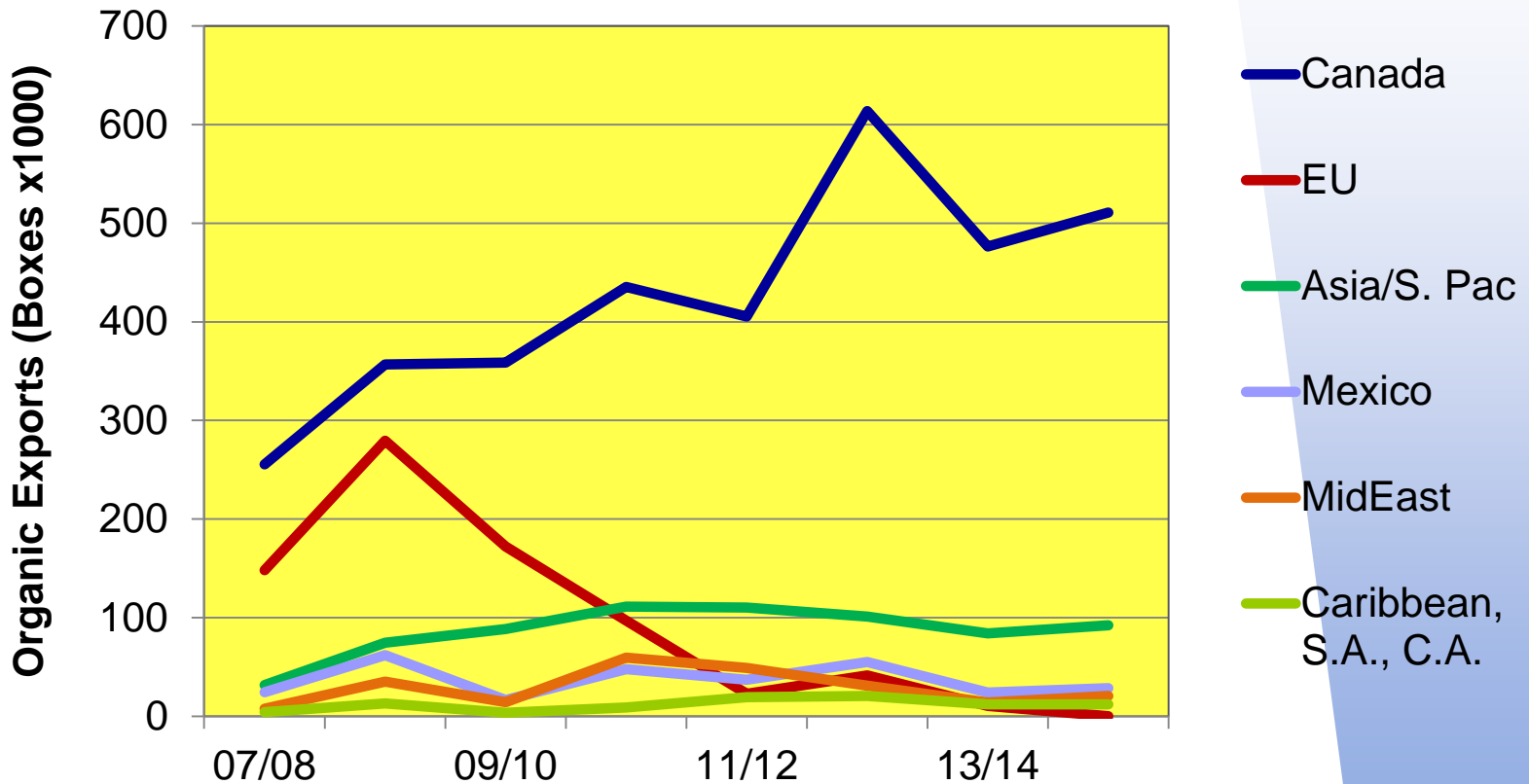
SEB=standard equivalent box of 40 lb. Data: Washington Growers Clearing House, WSTFA. FOB averages, all storage, grades, sizes. Annual data points represent season averages: season approx. Sept 1 to end of Aug.

Exports of WA organic tree fruit do not play as significant a role in the industry as do exports for conventional (table below). Canada has been the dominant markets for organic apples for years slide 40, with exports increasing over time. Europe, once an important market, imports virtually no WA organic apples.

	Conventional	Organic
	% of fresh crop exported in 2014	
Apple	34	8
Pear	36	9
Sweet cherry	32	8

USDA AMS, 2015

Washington Organic Apple Top Export Destinations



A survey of organic growers was done at winter meetings during January 2015 to get a sense of plans for expansion of organic tree fruit production in WA [slide 42](#). Based on responses from over 150 participants, significant increases in organic area are anticipated by 2018. A large share of the new area is expected to be high-density plantings, which will likely raise the average yields statewide as well, as suggested in [slide 43](#), where grower reported yields for organic 'Gala' apple were compiled for 2009-2012, and are compared to field consultant estimates of yields from high-density plantings in the state.

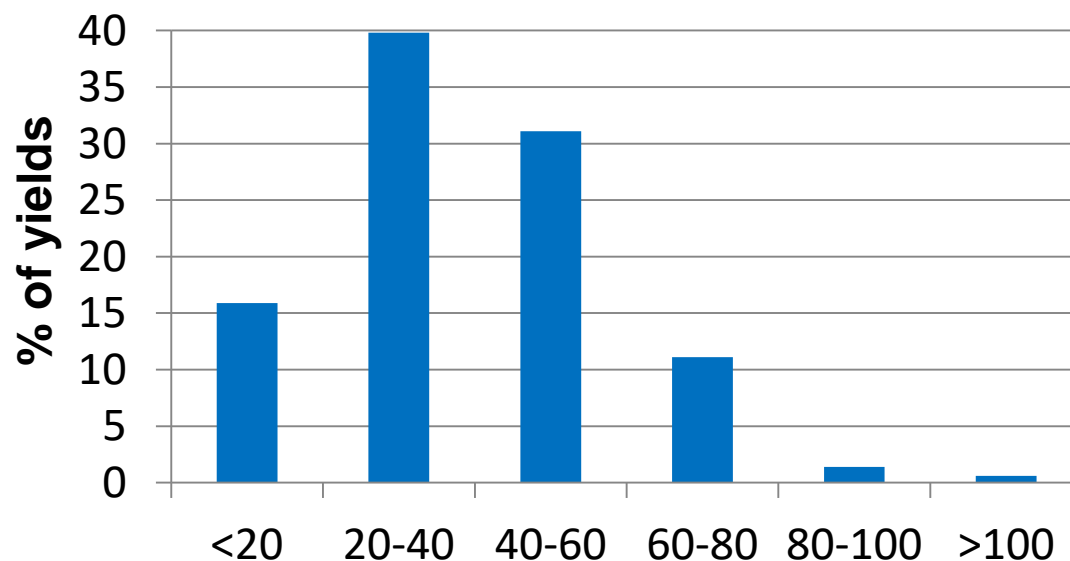
Based on these and other industry estimates, three individuals developed projections for WA organic apple production in 2018 [slide 44](#). Depending on how much area is actually transitioned to organic, and how quickly, there may be downward pressure on prices for several years or increasing demand could absorb all the new production. Some considerations for organic apple production in the future are listed in [slide 45](#), with one industry expert's conclusion on [slide 46](#).

Future Growth

	2014 acres	Possible new acres 2015-17	% increase
Apple	14,050	8,500	+60
Pear	1,840	1,335	+72
Cherry Sweet	1,932	1,370	+71

Based on a survey of WA organic orchardists, January 2015.
n=154

WA Organic Gala Yields 2009-2012



	<u>Bins/ac</u>	<u>range</u>	<u>n</u>
2009	36.3	5 to 92	106
2010	35.0	4 to 76	122
2011	36.5	7 to 110	128
2012	47.5	4 to 110	122
	38.9		

Organic Apple Projections, 2018

A: Yield – 58.8 loose bin/ac Gala

Volume- 2016, +50%; 2017, +30%; 2018, +40%;
includes alternate bearing

2018 - 20.57 mil boxes; oversupply at 12.7 and 15%
market growth, not 20%; ave. FOB \$27.52

B: Yield - 51 loose bin/ac (35 bin/ac packed fruit at 16
packs/bin). Volume – 10-21 mil boxes, based on org at
various % of the state apple crop

C: Yield @ 30, 40, or 50 loose bin/ac

Volume -11-25 mil packed boxes (packouts @ 70 or
80%). Assume 3,000 new cert acres each year
2016-2018

Organic Apple Projections, 2018

- New acres will yield more than existing acres
- Newest strains ,modern varieties required
- Longer storage needed to market larger crop
- Rebound conv prices not likely and no big 'exit' back to conventional
- Exports (beyond Canada) difficult; hi dollar, competition
- More innovation by organic growers; cannot farm 'conv' with 'org' materials

Bottom Line on Organic Apples

Washington will remain King for the foreseeable future in quality and production per acre.

While there will be large global apple production increases near-term that require price deflation, this will not be the case for organics. Year around supplies will come first, then international markets

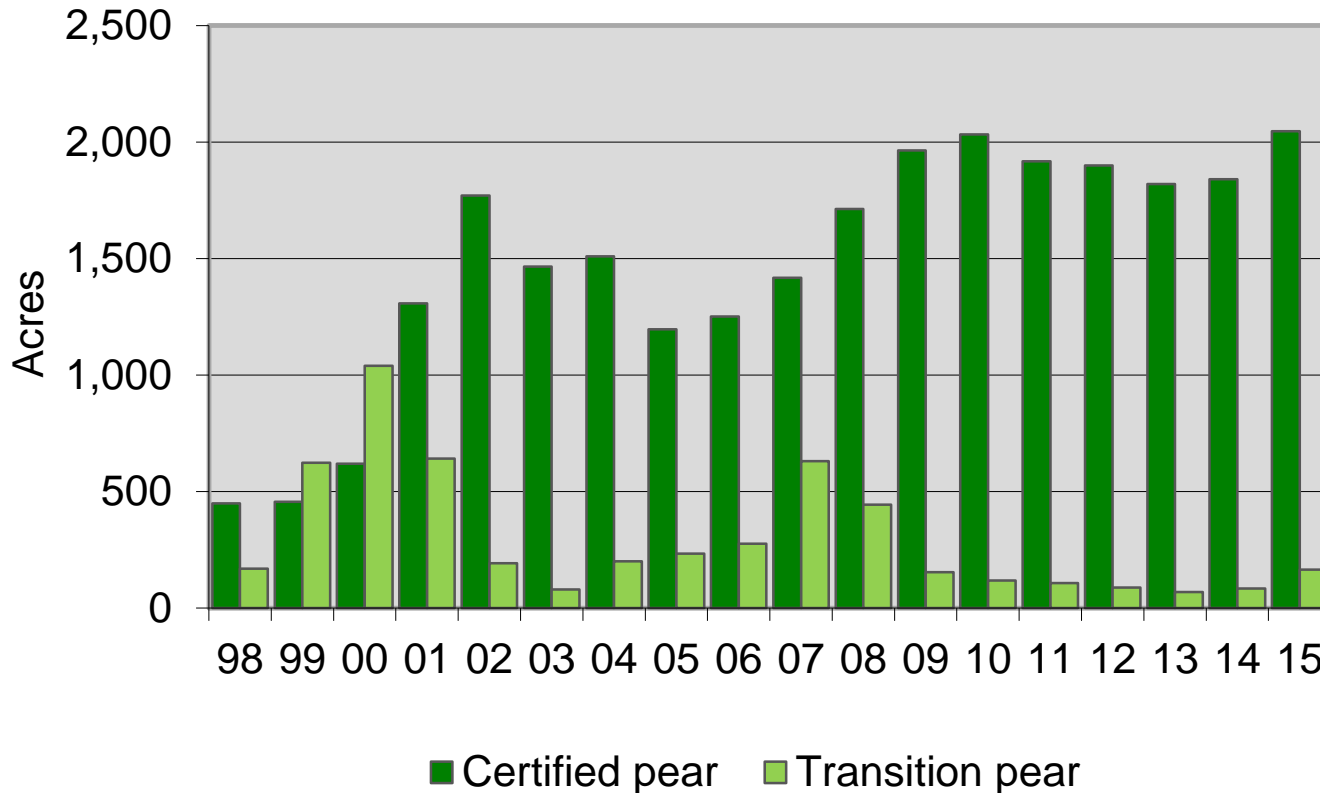
-H. Ostenson



Data on organic pear, sweet cherry, and other soft fruit acreage in WA are presented in [slides 48-50](#). All show area peaking in 2009, followed by some decline. Organic pear acres reached new record in 2015, while organic soft fruits have shown a steady decline. Organic cherry acres have rebounded some but are probably being slowed by concerns about control of Spotted Wing Drosophila.

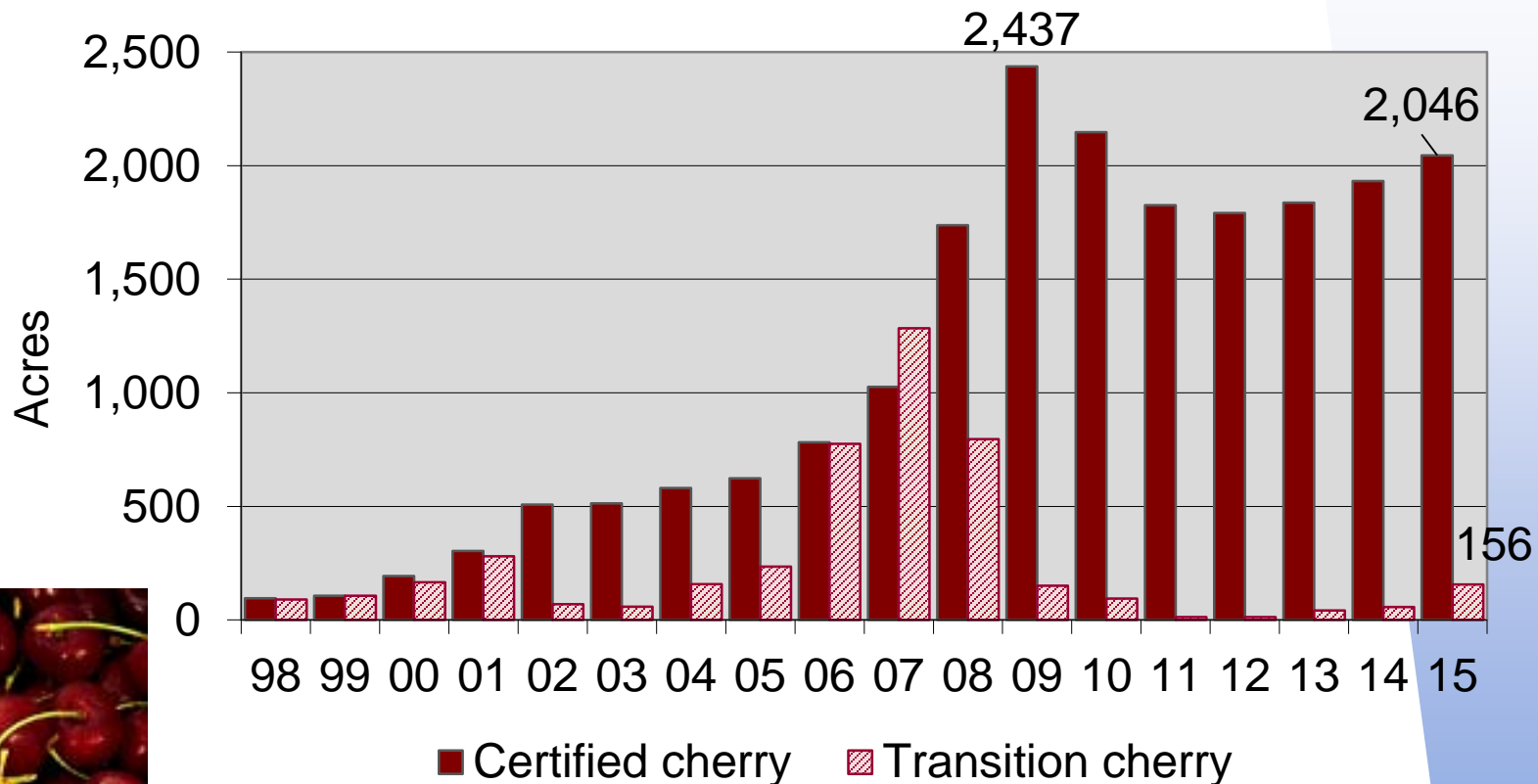
More detailed data on Washington and global organic tree fruit can be found at the web site listed on [slide 51](#).

Organic Pear Acreage Washington State



2015 organic = 9% of total WA pear acreage
(based on WA-NASS 2013 value of 20,900 pear acres)

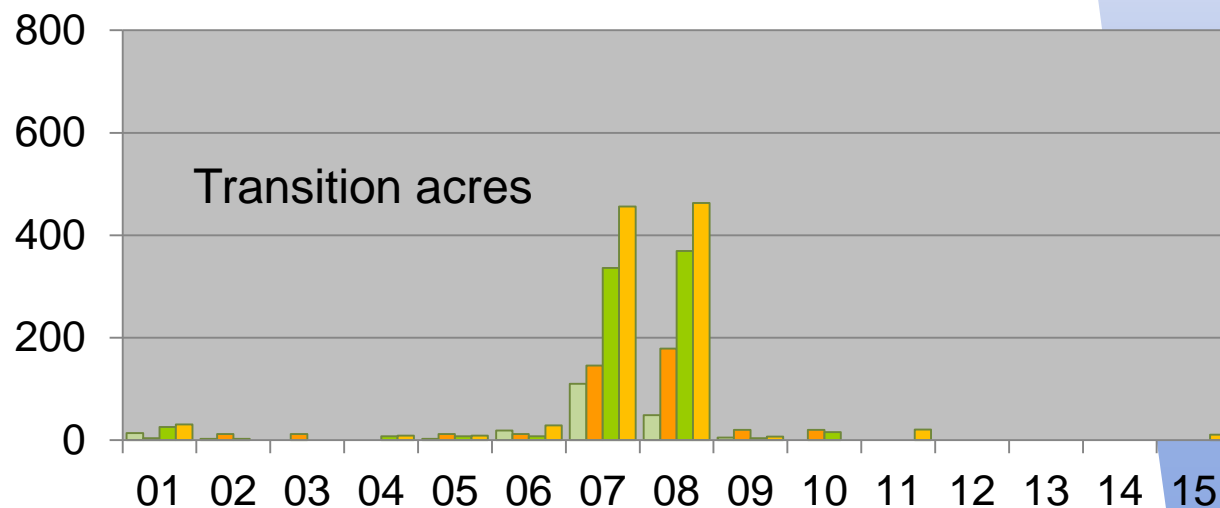
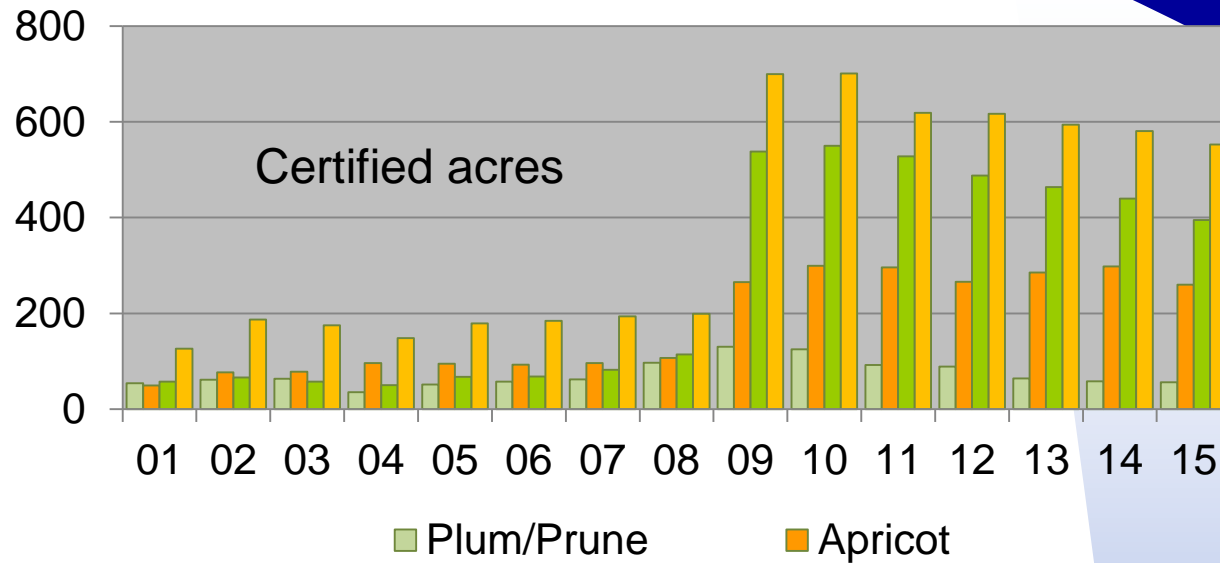
Organic Cherry Acreage Washington State (sweet + tart)



2015 organic = 5% of total WA cherry area
(based on 2012 WA-NASS estimate of 37,100 acres)



Washington State Other Stone Fruit Trends





More information on Washington organic tree fruit statistics
is available on-line at:

http://csanr.wsu.edu/pages/Organic_Statistics

[http://www.nass.usda.gov/Statistics_by_State/Washington/Publications/
Fruit/FruitTreeInventory2011.pdf](http://www.nass.usda.gov/Statistics_by_State/Washington/Publications/Fruit/FruitTreeInventory2011.pdf)

Citation:

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http://csanr.wsu.edu/pages/Organic_Statistics