Recent Trends in Certified Organic Tree Fruit in Washington State: 2022

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Abbreviations used:

CSANR	WSU Center for Sustaining Agriculture & Natural Resources
CSA	Community Supported Agriculture operation
AMS	USDA Agricultural Marketing Service
ERS	USDA Economic Research Service
NOP	USDA National Organic Program
NASS	USDA National Agricultural Statistics Service
WSDA	Washington State Dept. of Agriculture

The following set of slides presents the current and historical data on organic tree fruit area and production for Washington State, with some associated global and national data. Data come from various sources including certifiers [e.g., Washington St. Dept. of Agriculture (WSDA) Organic Program; Oregon Tilth Certified Organic (OTCO), California Certified Organic Farmers (CCOF)], The World of Organic Agriculture annual publication http://www.organic-world.net/index.html, USDA, Calif. Dept. Food and Agric. (CDFA), and industry sources [Washington State Tree Fruit Association (WSTFA), Wenatchee Valley Traffic Association (WVTA), Washington Growers Clearinghouse (WGCH), Pear Bureau Northwest (PBNW)]. Data from WSDA were extracted on 3/24/2023.

Organic agriculture continues to be consumer driven. Globally, retail sales of organic food were $135.5 billion in 2021, up 5%. The U.S. was the largest single country market ($57.5 billion), followed by Germany ($18.8 billion), France ($15.0 billion), and China ($13.4 billion). Switzerland was the country with the highest per capita organic expenditure, at about 10% of total food dollars. The global organic market has been divided between North America and Europe for years, but the Asian market is accounting for an increasing share (slide 4).

Consumer Demand for Organic Food

Market Share of Sales by Region (%)

	North Amer.	Europe	Other
2003	46	52	2
2007	43	54	3
2011	50	46	4
2013	49	43	8
2015	51	39	8 (Asia)
2017	50	41	9 (Asia)
2018	48	43	9 (Asia)
2019	45	43	12 (Asia)
2020	44	43	13 (Asia)
2021	43	44	13 (Asia)

Note: % has changed in part due to US$ vs euro currency fluctuations.

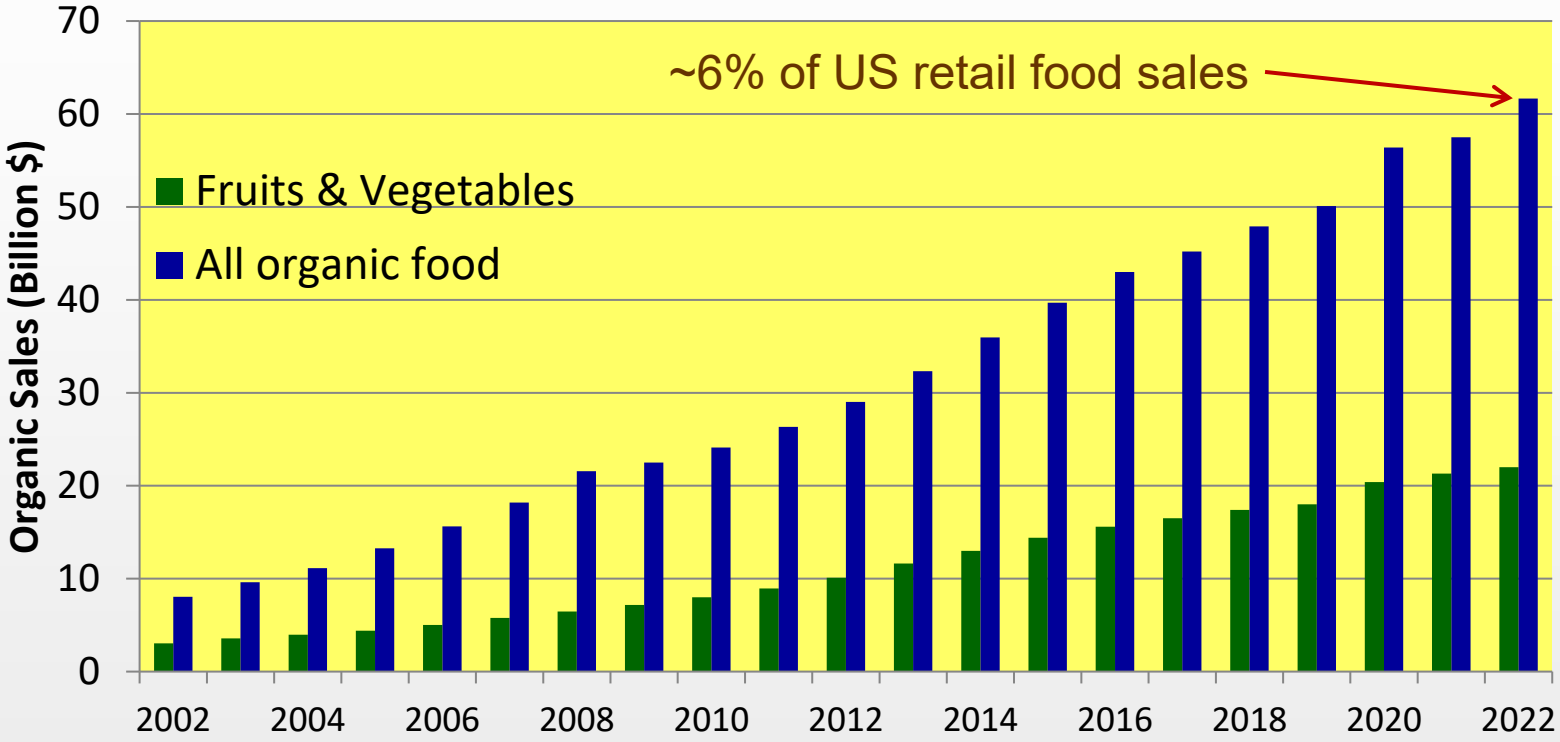
Source: World of Organic Agriculture

The next slide (6) shows the growth in retail sales of organic food in the U.S. since 2002. Growth dipped during the recession and sped up during COVID. The percent annual growth is declining as total sales increase, but the annual increase in sales dollars is fairly steady. Growth of the fruit and vegetable category was more stable (slide 7), confirming that these products are very core to organic consumers. These consumer data come from the Organic Trade Association (OTA) annual industry survey.

More data on the organic food sector are becoming available. Organic fruit sales grew faster than organic vegetables since 2011. Both volume and sales $ of organic fruit in the U.S. increased faster than overall organic food in 2020. Berries, apples, and bananas have been the top 3 selling organic fruits (slide 8). In 2016, the top 3 organic fruits accounted for 70% of all organic fruit sales, compared with 43% for the top 3 conventional fruits. Retail organic produce sales (volume) rose 16% in 2020 due to the pandemic while organic apple volume rose 14% (slide 9). Organic apple sales grew the most in 2020, the first year of the pandemic. Organic apples likely represent about 10% of all US apple consumption. Bananas, carrots, and apples were the top 3 organic produce items by volume in 2021, according to the State of Organic Produce which does not cover all the volume sold (slide 10).

Consumer Demand

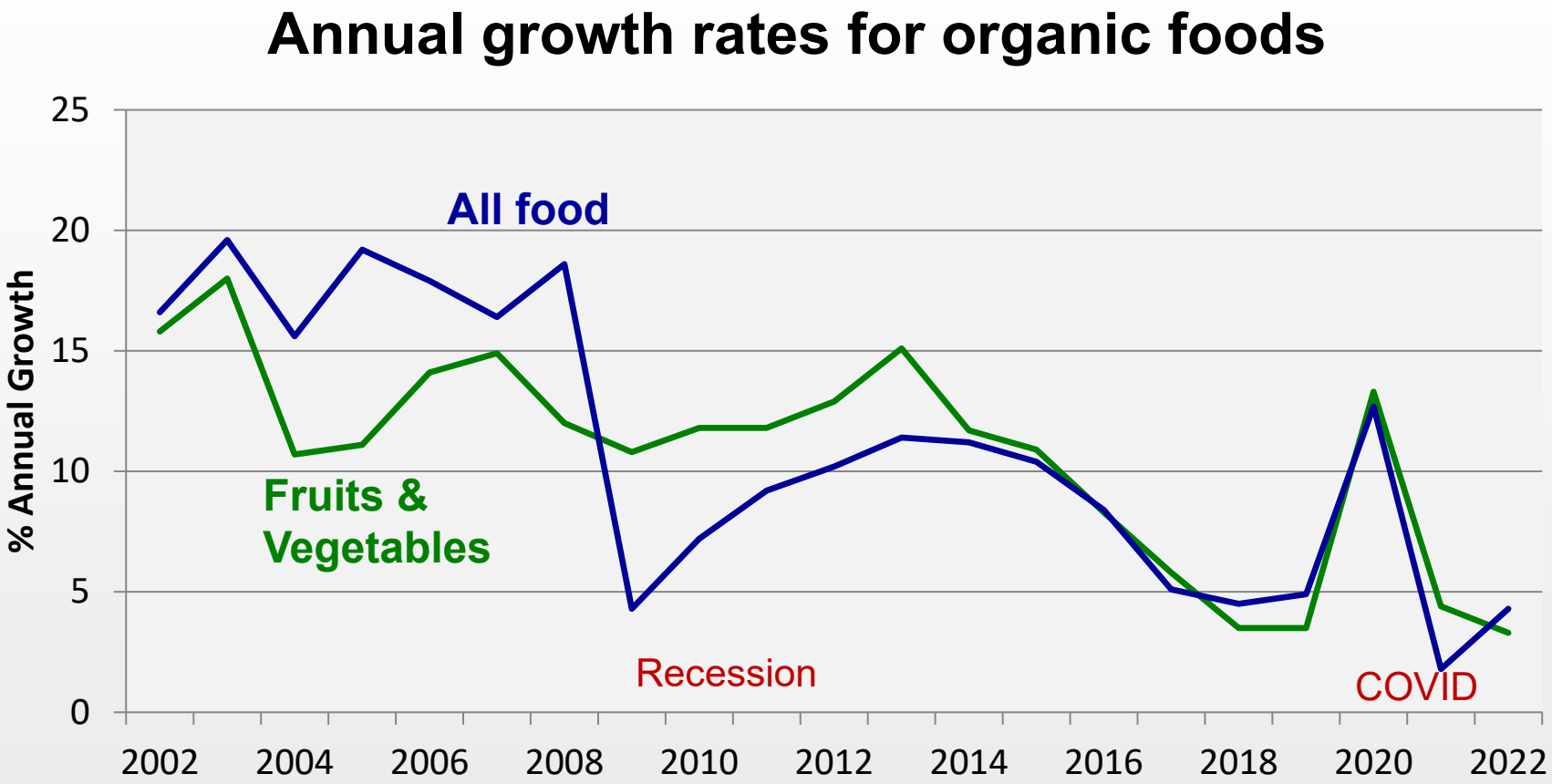
Growth of US Organic Food Sales



Retail organic food sales increased 4% in 2022. Organic fruits and vegetable sales increased 3% and were 36% of all organic food sales (and 15% of all US produce sales); over 90% were sales of fresh produce.

Source: OTA, Nutrition Business Journal

Consumer Demand for Organic Food



Based on supermarket retail sales; does not include direct market, specialty stores

Source: OTA, Nutrition Business Journal

Fresh Fruit Sales

	Conventional Fruit		Share of Dollars (%)
1	Berries	43%	17.5
2	Citrus		13.8
3	Apples		12.1
4	Grapes		11.5
5	Value-Added Fruit		10.9
6	Bananas		10.4
7	Avocados		6.7
8	Melons		5.0
9	Stone Fruits		3.7
10	Cherries		3.3
11	Specialty Fruits		2.6
12	Pears		1.4
13	Pineapples		1.2
14	Other Fresh Fruits		0.1

	Organic Fruit		Share of Dollars (%)
1	Berries	70%	36.9
2	Apples		18.7
3	Bananas		14.4
4	Citrus		8.5
5	Grapes		7.5
6	Avocados		5.4
7	Stone Fruits		2.1
8	Pears		1.8
9	Cherries		1.5
10	Specialty Fruits		1.5
11	Value-Added Fruit		1.0
12	Melons		0.4
13	Pineapples		0.3

Source: Nielsen Fresh (FCA universe) – Latest 52 weeks ending 10/28/17

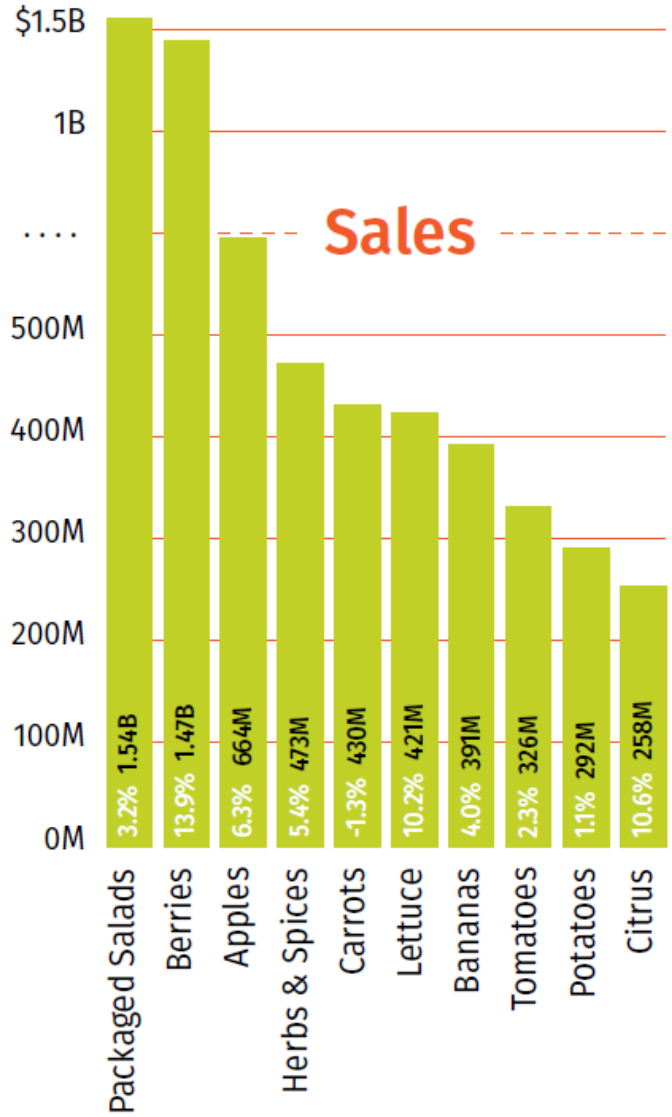
Organic Produce Network

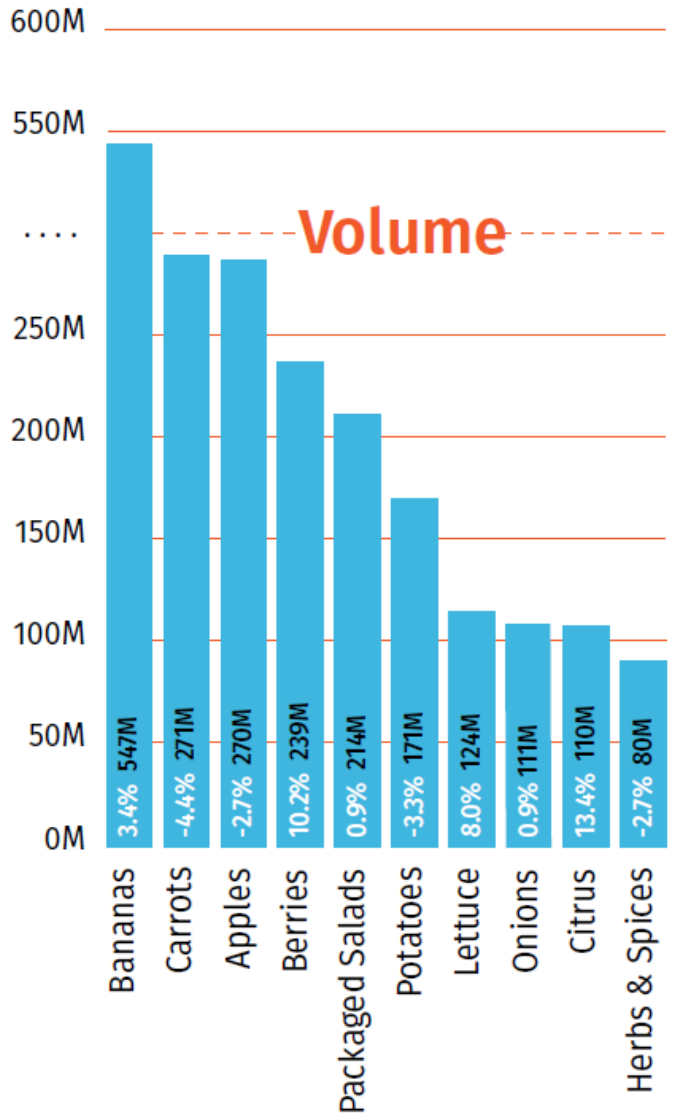
State of Organic Produce 2021

	All Organic Produce		Org. Apples	
	Sales $	Volume*	Sales $	Volume*
Total organic	9.22 bil	3.09 bil	664 mil	270 mil
Organic share	12%	7%	--	--
Change YOY 2021	+6%	+2%	+7%	-3%
Change YOY 2020	14%	+16%	+11%	+14%
Change YOY 2019	+5%	+5%	+4%	+7%

* Volume in million lb

- Focus on fresh produce
- Organic increases outpaced conventional
- Apples consistently #3 in sales $, volume
- 6.75 mil box shown vs 15.57 mil box shipped
- No data for pears, cherries





State of Organic Produce 2021

Estimates of global area of organic horticultural crops, including tree fruits, have been made several times in the past by the authors to help track trends. The most recent data (2021) from *The World of Organic Agriculture* were used in the following slides. Not all major producing countries, including the US, provide complete data each year. Organic tree fruit represented about 1.0% of all organic agricultural land globally, with temperate tree fruits having 40% of all organic tree fruit area (slide 12). Tropical/subtropical tree fruits were the largest category of organic tree fruit in 2021. All temperate tree fruits showed an area decline in 2021 (slide 13), but there appears to be poorer data reporting for the year. Banana had the largest area for a specific fruit, followed by apple. Europe and Asia have the largest areas of organic temperate tree fruit by far.

Area trends over time (slides 14 and 16) show a general growth trend until the last couple of years. The downturn in apple was driven largely by Poland (slide 15). Missing data from year to year also contribute to variability. Europe accounted for about 52% of 2021 reported organic temperate tree fruit area (Poland 30,714 ha; Italy 24,694 ha; France 23,531 ha). China had the largest area for one country (112,000 ha). The U.S. had over 18,000 ha. Eastern Europe reported a large increase in organic plum area.

Global Organic Tree Fruit Area

Organic tree fruit crops 746,448 ha
~1.0% of organic agriculture land

	Hectares* 2021	% of organic tree fruit	% change from 2020	% of all global
Temperate	301,829	40	+17	2.6
Citrus	114,600	15	-18	1.1
Tropical/ Subtropical	330,019	44	+13	1.1

*certified + transition

1 hectare (ha) = 2.47 acres

Source: World of Organic Agriculture; FAO

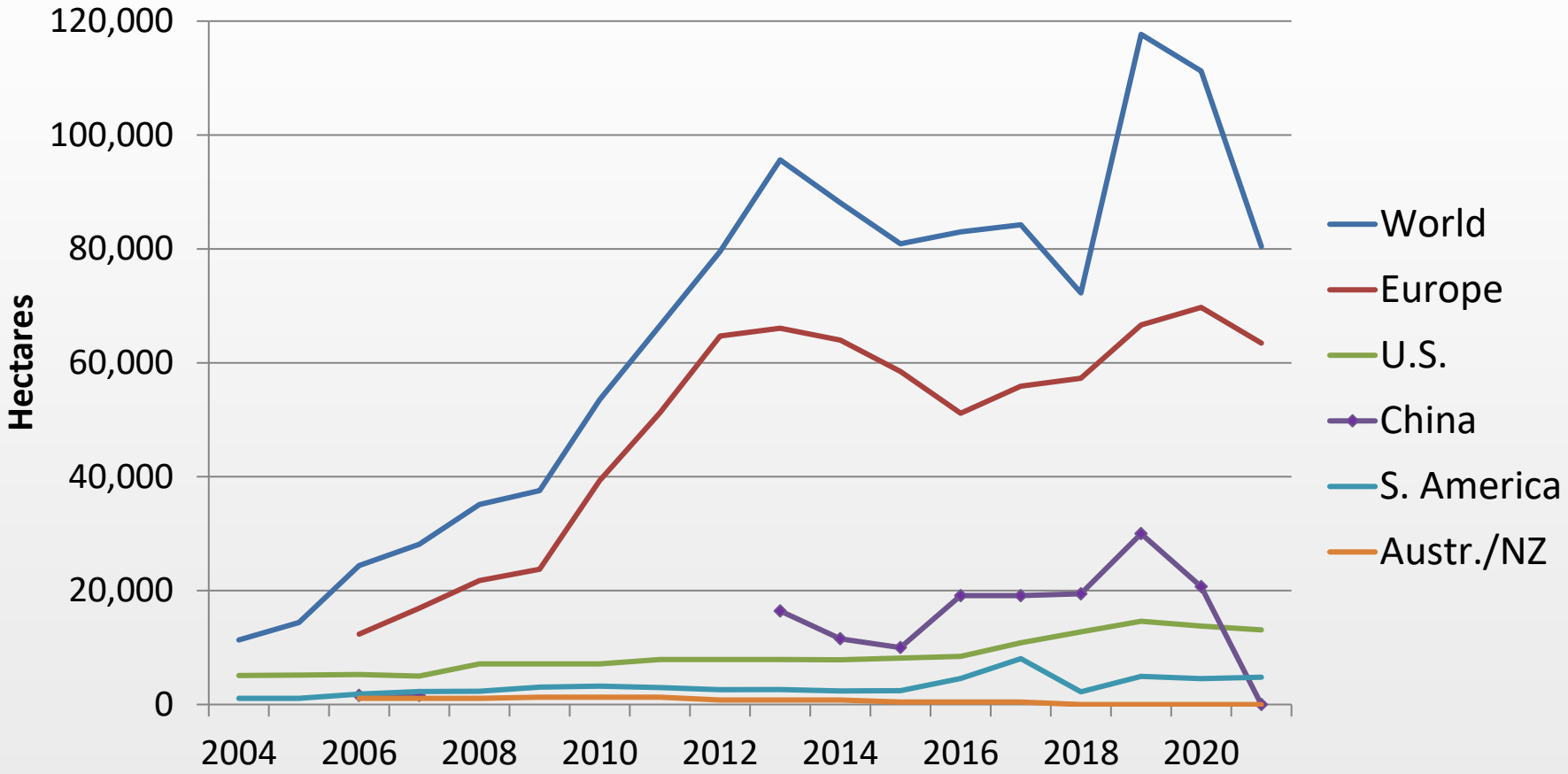
Global Organic Tree Fruit Area

	Hectares* 2021	% change from 2020	% of organic category	% of all global#
Apple	80,435	-24.6	27	1.7
Apricot	15,912	-54.8	5	2.9
Cherry	14,698	-26.5	5	2.2
Peach/Nect.	8,788	-38.0	3	0.7
Pear	13,078	-38.4	4	0.9
Plum	38,745	-0.7	13	1.5
Other, no details	121,878		40	
Banana	104,709	+33.5	32	0.9
Orange	28,490	+11.0	25	0.7

*certified + transition; # using 2021 FAO global data

Source: World of Organic Agriculture; FAO

Organic Apple Trends
Expansion of Global Area



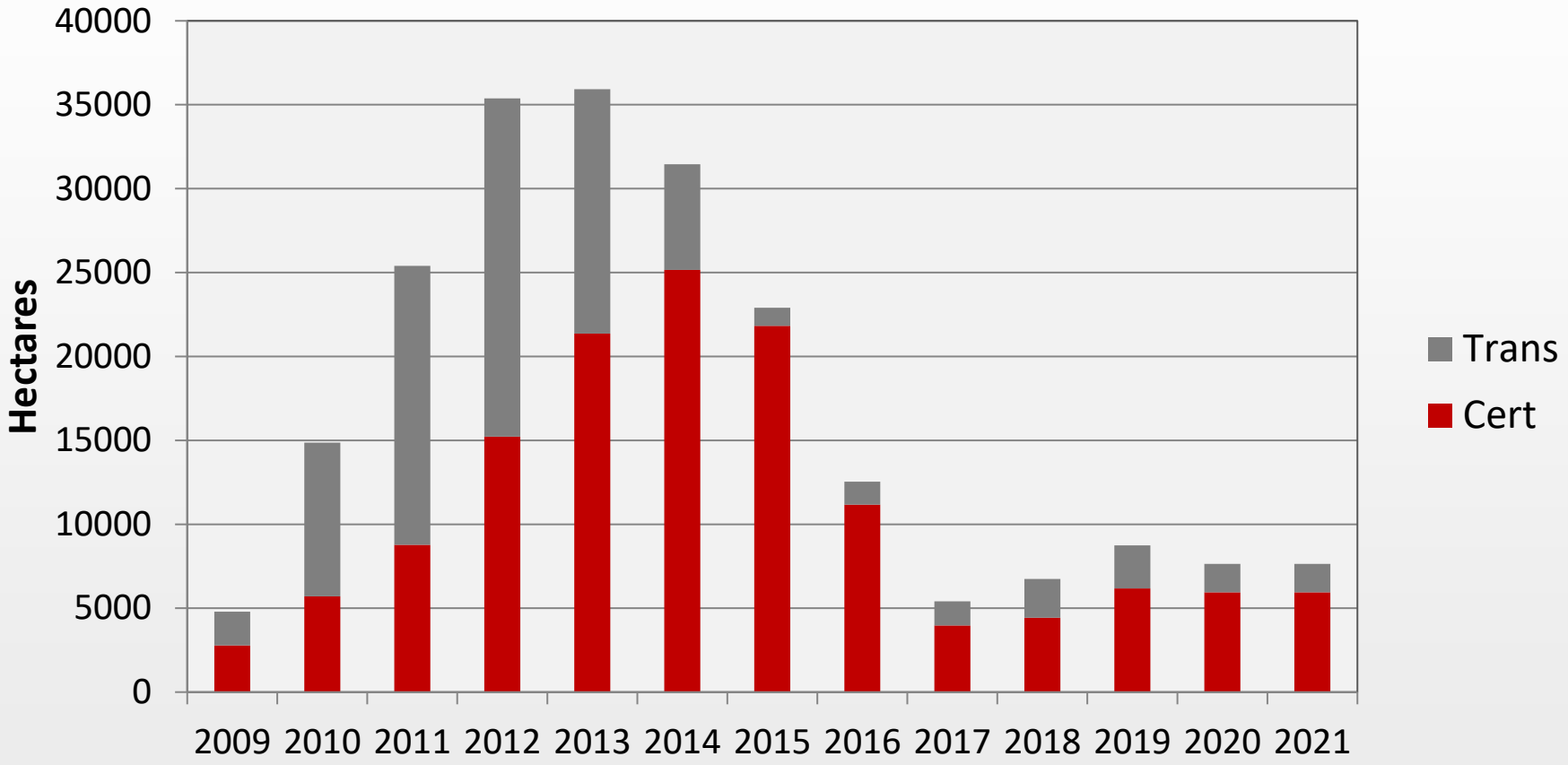
No data for: Australia, NZ 2019-2021; China 2021

*Certified + Transition area

1 hectare = 2.47 acres

Adjusted for est. 2019 US values;
Data courtesy of H. Willer, FiBL

Organic Apple Area in Poland

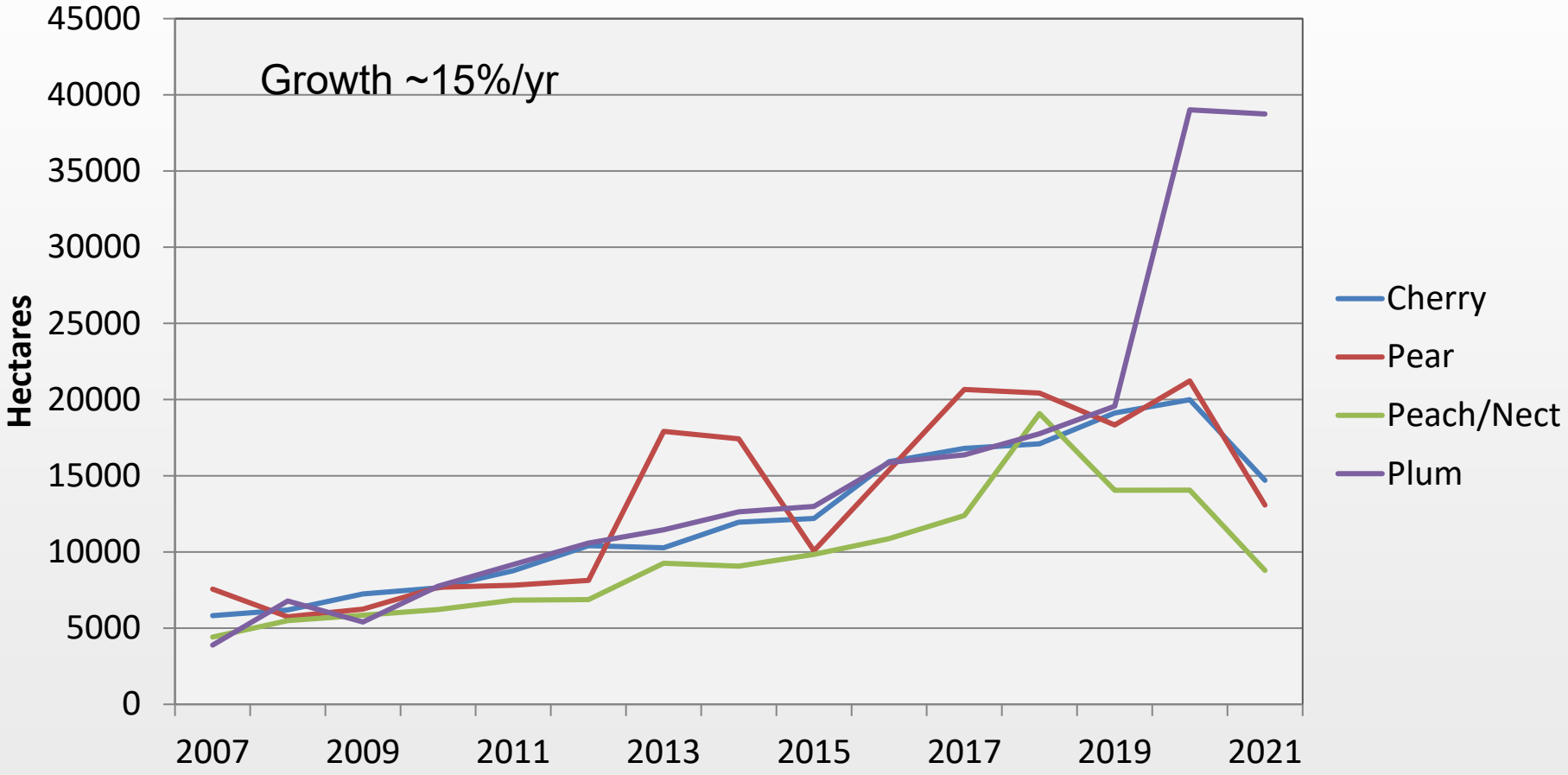


Decline of organic apple area in Poland explains much of the EU decline.

Data courtesy of H. Willer, FiBL

Organic Tree Fruit Trends

Expansion of Global Area



*Certified + Transition area

Unadjusted for US values

Data courtesy of H. Willer, FiBL

World Organic Apple Area

	2021 Ha (C+T)	% change from 2020
World	80,435*	-38
US	13,102	-5
Europe	63,456	-11
Poland	7,639	-14
Germany	7,600	+3
Italy	8,894	+8
France	14,639	0
Turkey	3,636	-61
China	n.a.	?
Argentina	2,223	+9
Chile	2,396	-13
New Zealand	n.a.	?

1 hectare (ha) = 2.47 acres *includes US estimate

Europe is the leading region for producing organic tree fruits.

- >70% of world organic apple area

WA organic apples, 2021

- 11,640 ha cert.
- ~90% of US area
- 15% of world certified area, but higher % of production

Data courtesy of H. Willer, FiBL

Data on the area of organic tree fruit production in the U.S. are not collected regularly. The 2021 and 2019 NASS organic survey data are available, but none for 2020 or 2022. The results in the following tables through 2021 (slides 19 to 21) come from USDA ERS reports, certifier data, CDFA, and USDA NASS surveys. In general, >90% of certified organic apple area has been located in the semi-arid regions of the western U.S. where there is little summer rainfall which minimizes many key diseases.

This pattern holds true for other temperate tree fruit as well, such as pears, sweet cherries, peaches/nectarines, plums, and apricots. For example, based on data from the NASS 2021 Organic Production Survey, Washington State is the major producer of organic apples, pears, and cherries. It has 89% of the reported organic apple acres, producing 97% of the reported fresh fruit volume in the country. It also has 71% of the organic pear acres and 60% of the volume, and 83% of the sweet cherry acreage and 93% of the volume. A similar situation exists for peaches/nectarines and plums/prunes in California.

U.S. Organic
Temperate Tree Fruit Area (ac)

	2016			2019			2021		
	WA	CA	US	WA	CA	US	WA	CA	US
Apple	16,191	3,186	20,855	32,537	2,191	36,148	28,750	1,516	32,344
Pear	2,243	682	2,986	4,201	1,076	5,409	4,205	1,531	5,935
Apricot	251	442	675	360	547	922	274	544	820
Cherry	2,546	433	3,284	3,352	225	4,424	3,053	251	3,698
Nectarine	379	1,047	1,437	472	1,055	1,535	371	1,160	1,576
Peach	553	1,761	3,188	602	1,547	3,485	416	1,831	3,214

Data from various certifiers, CDFA, and USDA-NASS.

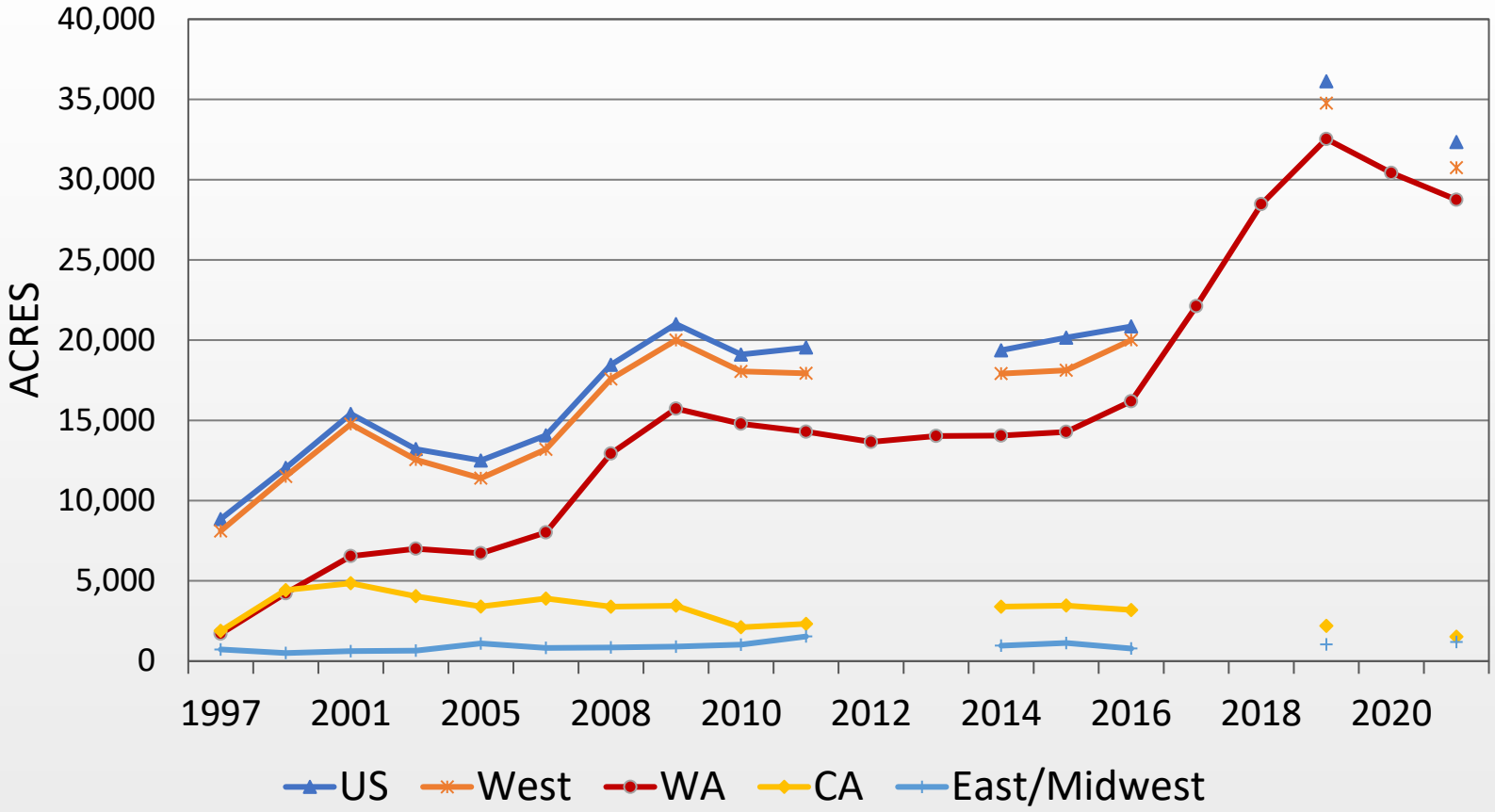
US Organic Apple Area
(acres, estimated)

State	2000	2001	2005	2008	2011	2015	2016	2019	2021
WA*	4,228	6,540	6,721	12,936	14,296	14,283	16,191	32,537	28,750
CA*	4,423	4,853	3,402	3,393	2,322	3,460	3,186	2,191	1,516
AZ	1,795	1,715	865	816	354	?	?	?	?
CO	431	635	202	164	509	176	219	150	244
OR	350	350	123	136	234	143	322	179	138
Other West	281	677	83	139	96	59	93	52	97
West total	11,508	14,770	11,396	17,584	17,934	18,121	20,061	35,109	30,745
Midwest	419	567	708	655	1,207	563	476	818	930
NY & NE	83	52	392	193	361	555	277	218	256
S & SE	28	15	8	33	40	10	24	3	56
US Total	12,038	15,404	12,504	18,465	19,542	20,156	20,855	36,148	32,344
*WA and CA values are from WSDA, OTCO, CCOF, and CDFA thru 2019									

>90 % in arid west

Combined data sets from WSU-CSANR ,USDA-ERS, USDA-NASS; Other West states include ID, MT, NM, NV, UT; updated 2011 to ERS values.

U.S Certified Organic Apple Area



Data are mostly from USDA-ERS and USDA-NASS; except WA is from certifiers and CA is from CDFA and NASS.

The acreages of different organic tree fruits in Washington over time are shown in slide 23. While accounting for about 29% of all certified organic acres in the state, organic tree fruit generates over half of the farmgate value of all organic products grown in the state (slide 24). Storage, packing, and marketing add another $150 million or more of value each year. Estimates for the value of organic tree fruit that is processed could not be determined, but demand for these products is growing (e.g., juice, puree, sliced apples). Organic apples dominate the organic tree fruit sector for area, production, and value, and sales value has been rapidly increasing (slide 25). The value of the 2021 organic apple crop increased over the previous year as prices improved somewhat for most varieties.

Organic Tree Fruit Acres
Washington State

	--- Certified acres ---								Trans acres†
	2010	2016	2017	2018	2019	2020	2021	2022	2022
Apple	14,790	16,191	22,116	28,473	32,537	30,424	28,750	28,173	934
Pear	2,033	2,243	2,763	3,263	4,201	4,256	4,205	3,728	21
Cherry	2,147	2,078	2,546	3,014	3,352	3,180	3,053	2,856	33
Apricot*	299	251	216	271	360	268	274	267	0
Nectarine	550	379	357	470	472	318	371	339	0
Peach	701	553	580	580	602	469	416	350	<1
Plum/Prune*	125	76	45	49	53	106	46	49	<1
Mixed, other	13	--	1	4	2	0	18	19	0
Total*	20,658	21,771	28,624	36,122	41,580	39,021	37,135	35,781	988

*apricot includes aprium; plum includes prune, pluot and plumcot; totals do not include mixed tree fruit;
†only those acres registered with a certifier

Organic tree fruit accounted for about 14% of all tree fruit acres in Washington State in 2018.

Combined certifier data

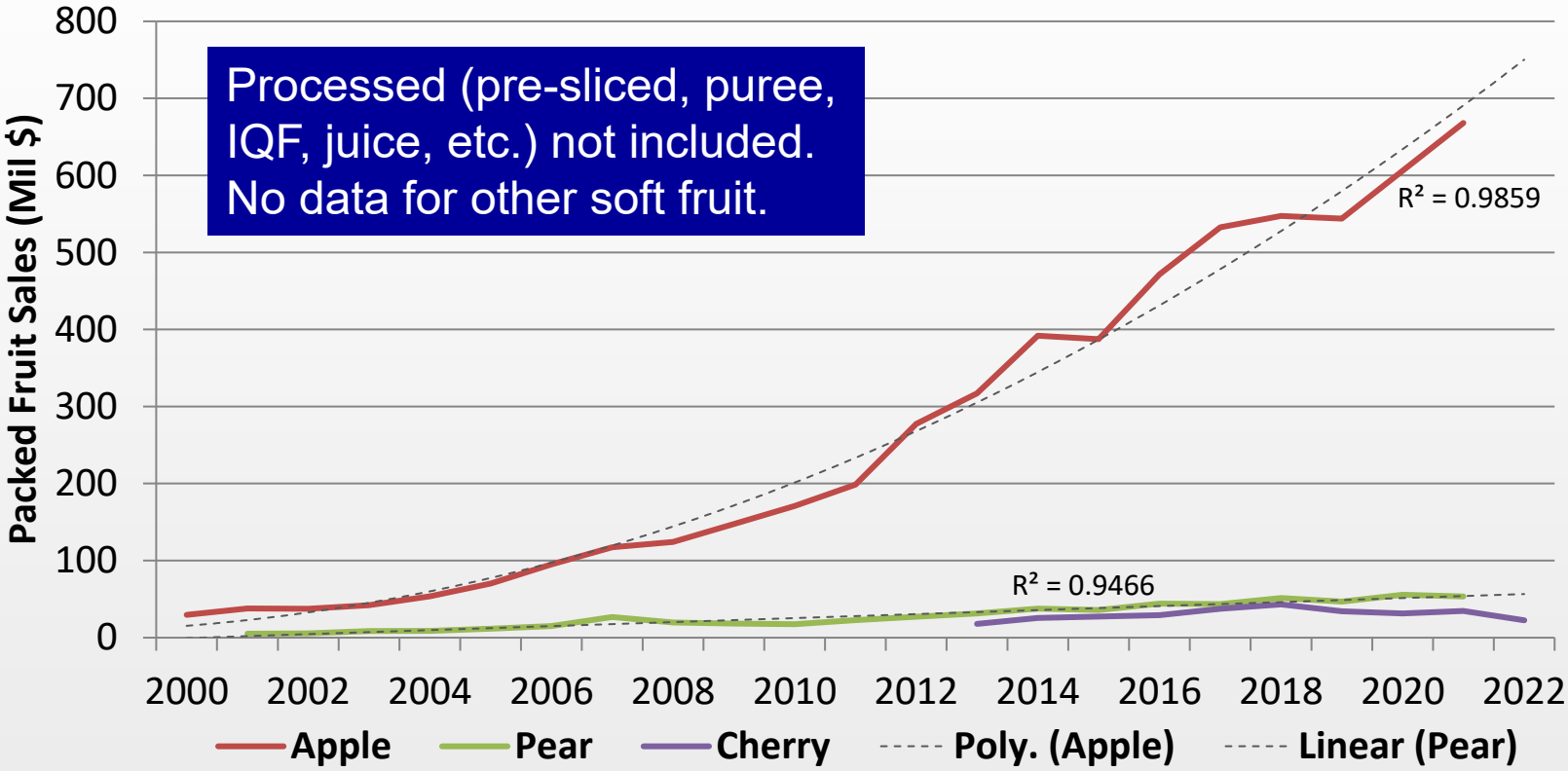
Value of WA Fresh Organic Tree Fruits

	Sales Year Farmgate Value			Crop Year Packed Value					
	2009	2010	2011	2011	2014	2016	2018	2020	2021
Million $									
Apple	77.85	96.28	121.04	198.55	391.9	471.6	547.4	606.0	668.0
Pear	8.87	8.66	11.87	22.71	37.6	44.1	51.3	55.7	53.4
Cherry	9.92	10.05	17.09	15.31	25.4	25.4	43.0	31.4	34.6
Other	5.05	7.49	10.95	>11.0	?	?	?	?	?
Total	101.69	122.48	160.95	>248	>455	>541	>642	>693	>756

Sales year = Jan.- Dec., regardless of when the crop was harvested.
Crop year = value of the crop harvested in the given year, that may be sold over multiple years; uses Packed Value based on FOB price.

Data: WSDA, WGCH, WVTA

Value of Fresh WA Organic Tree Fruit



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 included processed fruit.

Data: WSTFA, WGCH, WVTA

The expansion of organic apple area in the state has proceeded in a stepwise fashion as shown in slide 27. Partly this is due to the 3-year transition requirement that creates a lag between a market signal to growers and their ability to enter the market. There is also a lag in exiting, for example when prices fall, since growers have invested in the transition period and in various production practices. Increases in area have been spurred by crisis situations, such as Alar in 1989, and the crash in conventional 'Red Delicious' prices in the late 1990s, as well as steadily increasing demand and periods of high price premiums.

'Gala' and 'Fuji' have dominated organic apple plantings, with 'Honeycrisp' increasing rapidly in area and now surpassing 'Fuji' (slide 28). The change in area of cultivars over time can be seen in slides 29 and 30. In addition, many new and specialty cultivars are being grown organically, including some for hard cider production (slide 31). So far, only 13 ac of Cosmic Crisp® were reported as certified organic.

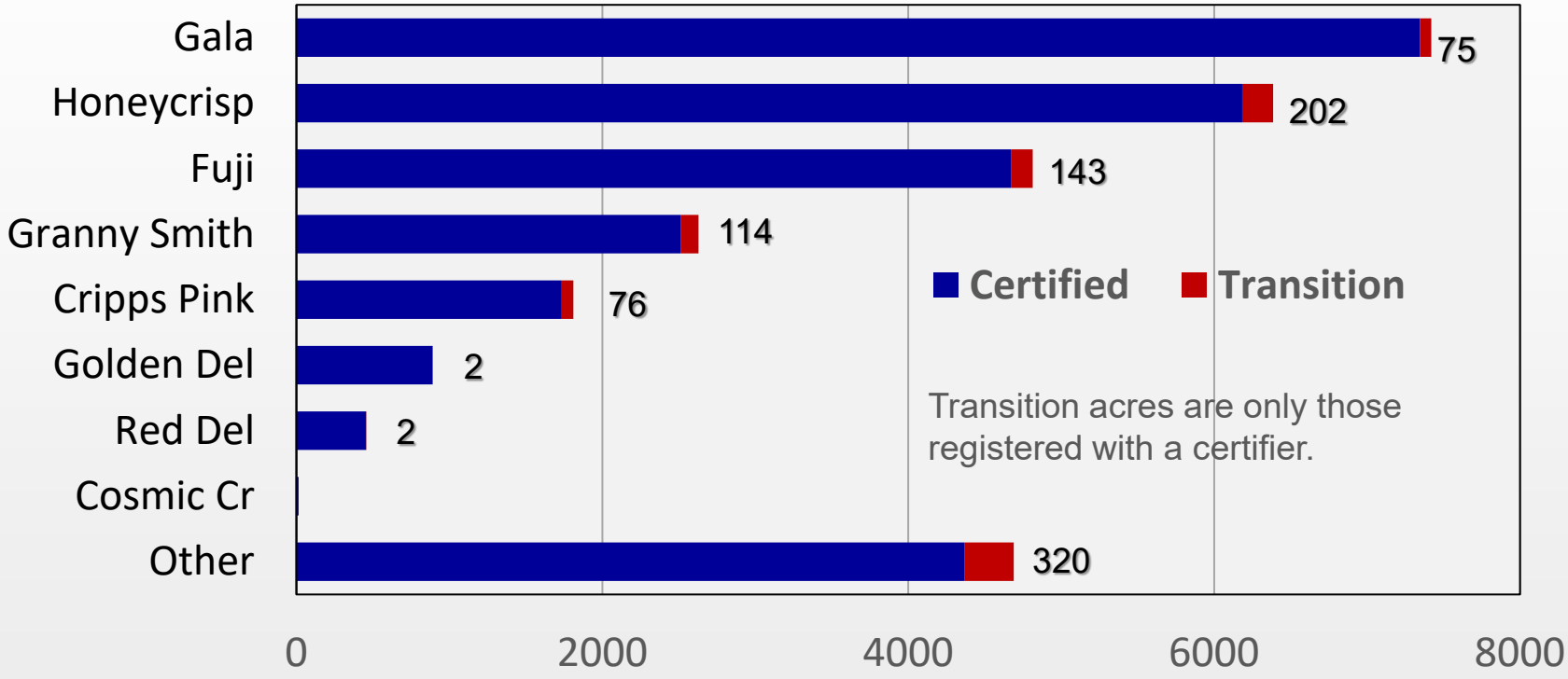
Organic Apple Acreage
Washington State

Cert. organic apples = 16% of WA apple acreage

(based on 2017 NASS value of 179,146 acres)

*Transition acres from WSDA

Organic Apple Variety Acres
Washington 2022



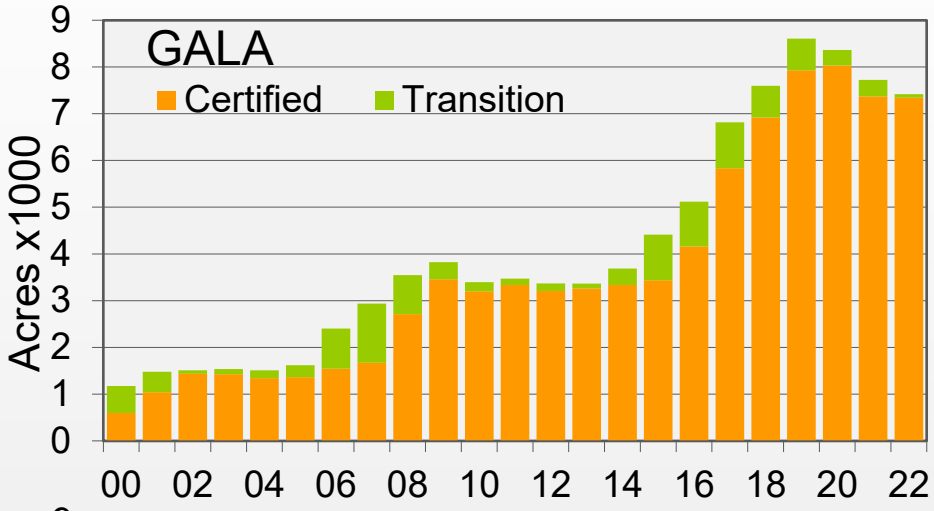

WA Fuji; ARS Photo

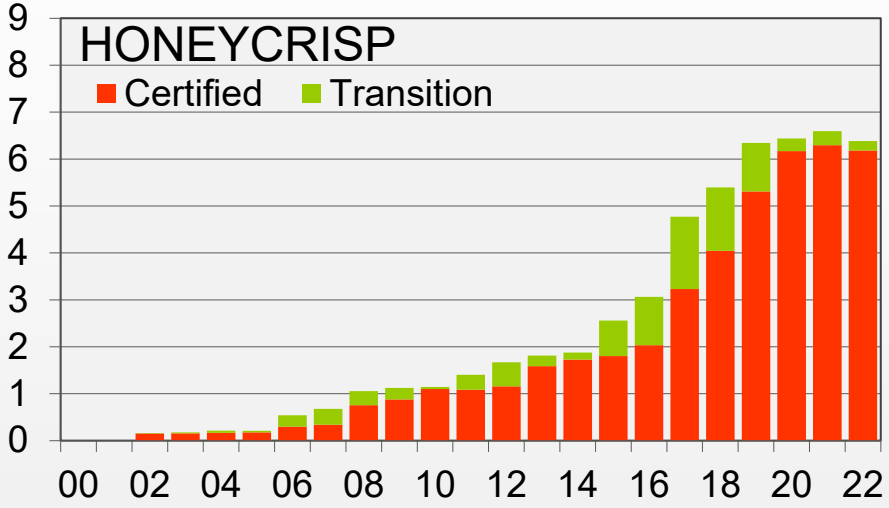
- Gala, Fuji, Honeycrisp = 65% of certified apple acres
- Honeycrisp replaced Fuji as #2

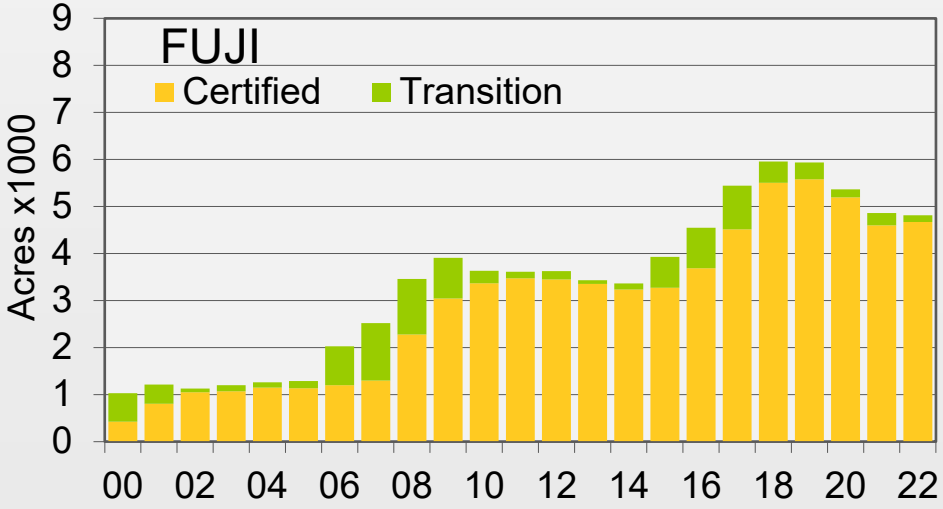
WSDA, OTCO and CCOF data. Cripps Pink includes Pink Lady.

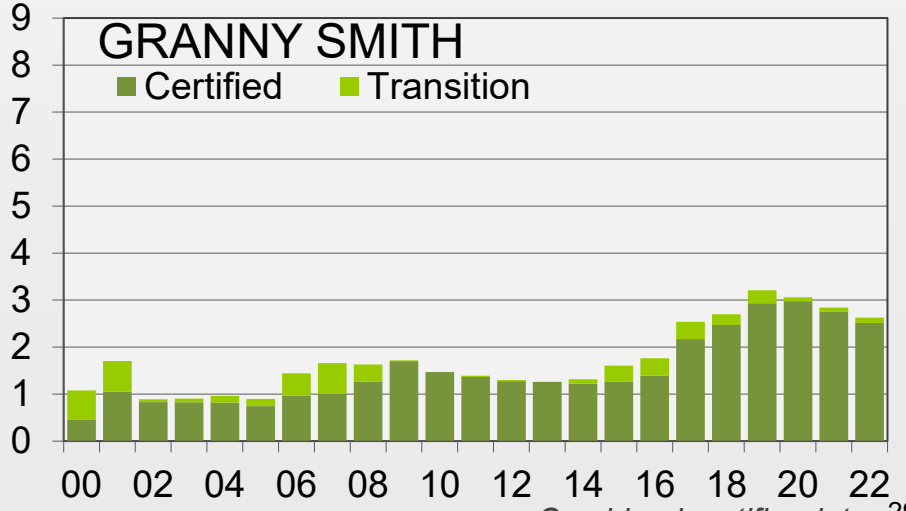
Organic Apple Varieties

Washington State Acres Trend



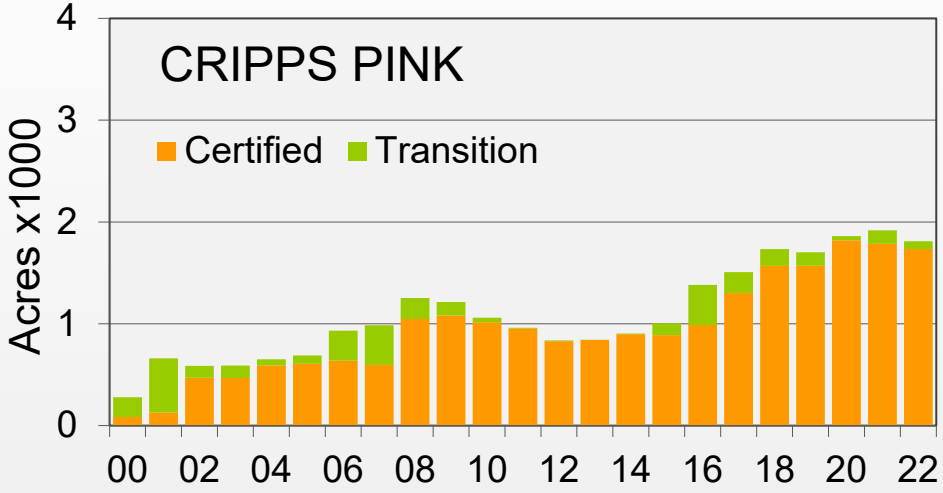


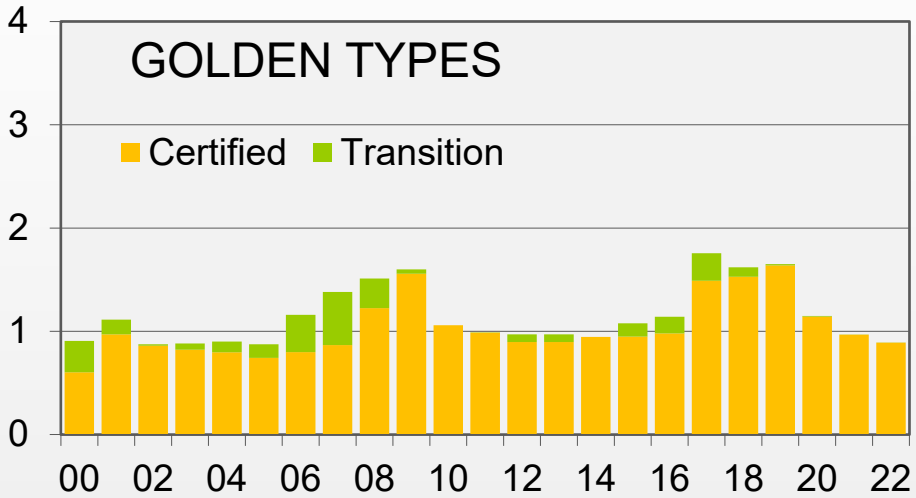


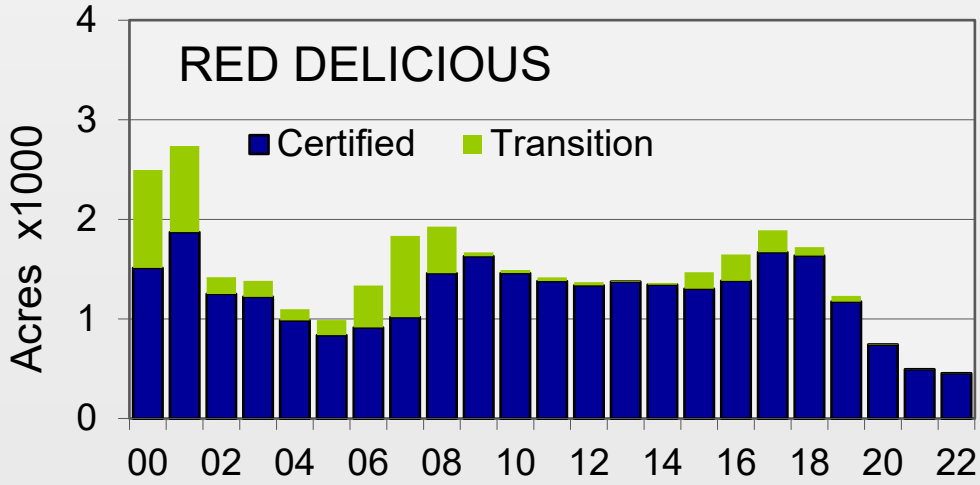


Combined certifier data

Organic Apple Varieties
Washington State Acres Trend

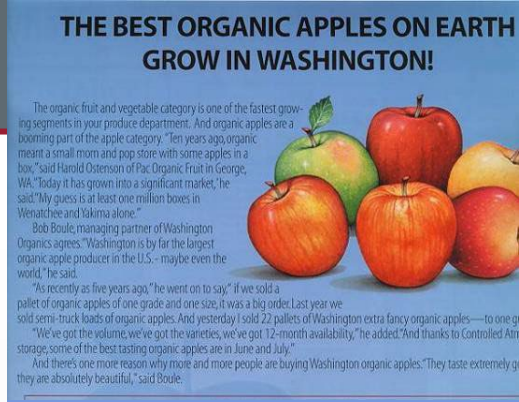






Combined certifier data

Organic Specialty Apples
Washington State 2022


THE BEST ORGANIC APPLES ON EARTH GROW IN WASHINGTON!

The organic fruit and vegetable category is one of the fastest growing segments in your produce department. And organic apples are a booming part of the apple category. "Ten years ago, organic meant a small mom and pop store with some apples in a box," said Harold Ostenson of Pac Organic Fruit in George, WA. "Today it has grown into a significant market," he said. "My guess is at least one million boxes in Wenatchee and Yakima alone."

Bob Boule, managing partner of Washington Organics agrees. "Washington is by far the largest organic apple producer in the U.S.– maybe even the world," he said.

"As recently as five years ago," he went on to say," if we sold a pallet of organic apples of one grade and one size, it was a big order. Last year we sold semi-truck loads of organic apples. And yesterday I sold 22 pallets of Washington extra fancy organic apples—to one g

"We've got the volume, we've got the varieties, we've got 12-month availability," he added. "And thanks to Controlled Atm storage, some of the best tasting organic apples are in June and July."

And there's one more reason why more and more people are buying Washington organic apples. "They taste extremely g they are absolutely beautiful," said Boule.

WA Apple Commission

<u>Over 100 varieties of organic apples grown in WA, from small to larger quantities</u>

- 100-1000 ac: Ambrosia®, Autumn Glory, Envy™, Lady Alice®, Opal®
- 50-100 ac: Braeburn , Jonagold, Minneiska (SweeTango®), Piñata ®
- 11-50 ac: Cameo, Cosmic Crisp®, cider, Jazz, Jubilee, Kanzi ® Rojo,
- 1-10 ac: Arkansas Black, Ashmead's Kernel, Crimson Crisp™, Earligold™, , Winter Banana, Zestar! ™ and more

Varieties listed in WSDA producer directory:
https://agr.wa.gov/departments/organic/about-organic#lists

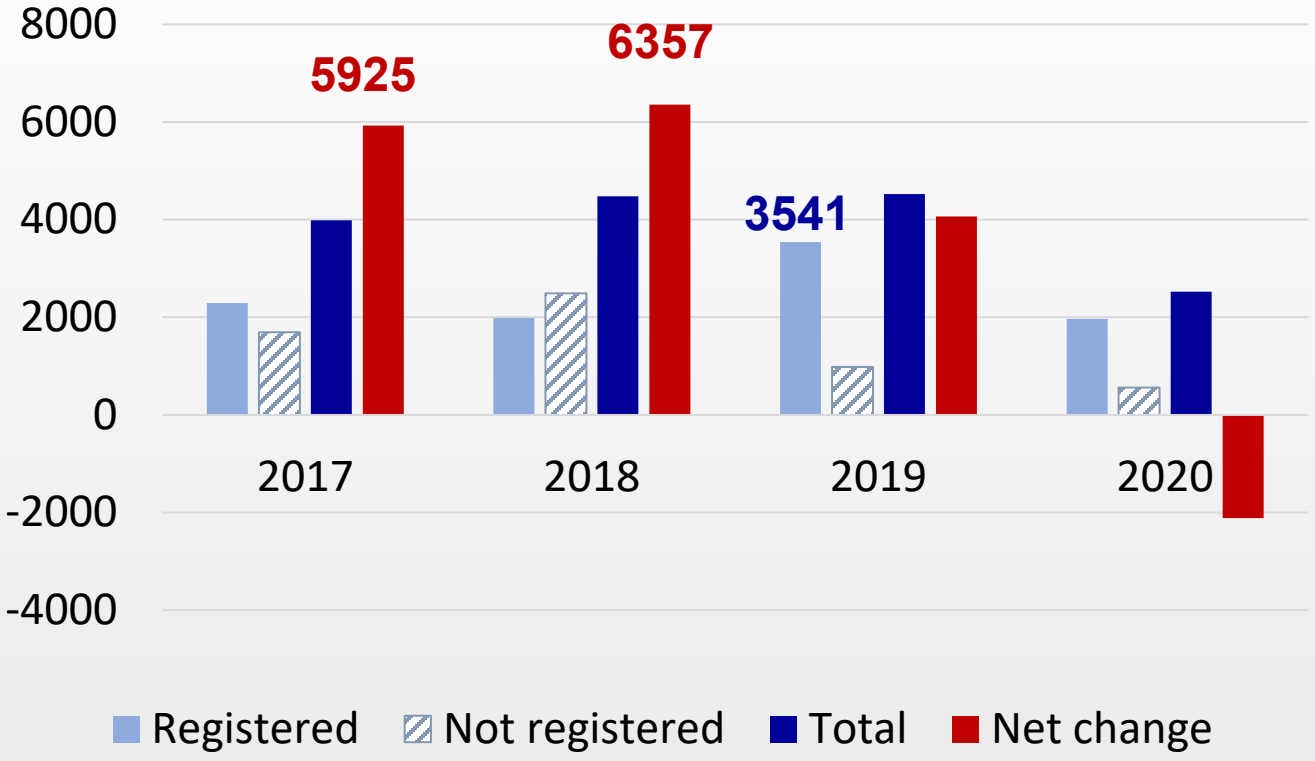
Combined certifier data

A large number of apple acres transitioned to organic in 2017 and 2018. Estimates made in advance of this tended to be low (slide 33). In 2018, there were 3,541 ac of apple registered for transition with certifiers. No breakdown was available for acres in first year versus second year transition. However, a slowing of organic apple expansion was expected in 2019 and for the next several years as the market 'digests' all the recently added production. This has occurred.

Along with expanded acres, organic apple yields were increasing (until 2018), with the transition of many acres of modern, high-density plantings (slide 34). These data were calculated by dividing the actual number of packed boxes shipped each year (by variety), by the actual number of certified acres for that variety, both values that are very accurate. Yields went from around 400 packed boxes per acre in 2008 to 600 in 2015. Apples diverted to processing and other uses are not included and would raise the yield estimates if they were. For example, some growers are harvesting Goldens directly for processing to reduce costs.

There are fewer transition acres for pears and cherries, and these increases are not expected to result in a large new pulse of fruit.

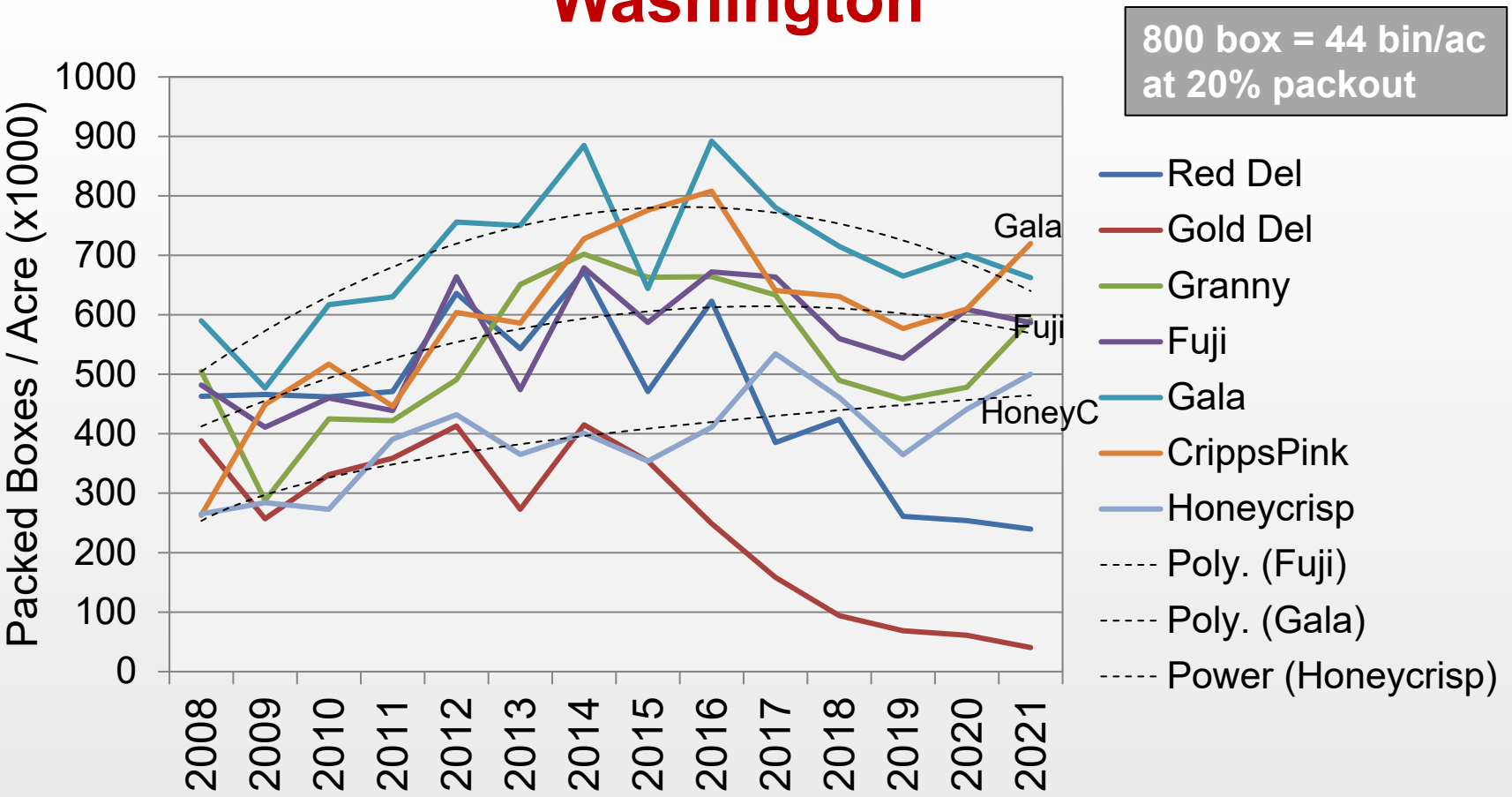
Estimated WA Organic Apple Transition Acres



Based on registered transition acres (January) and data from WA fruit companies (Jan. 2017)

Organic Apple Yield Trend

Washington



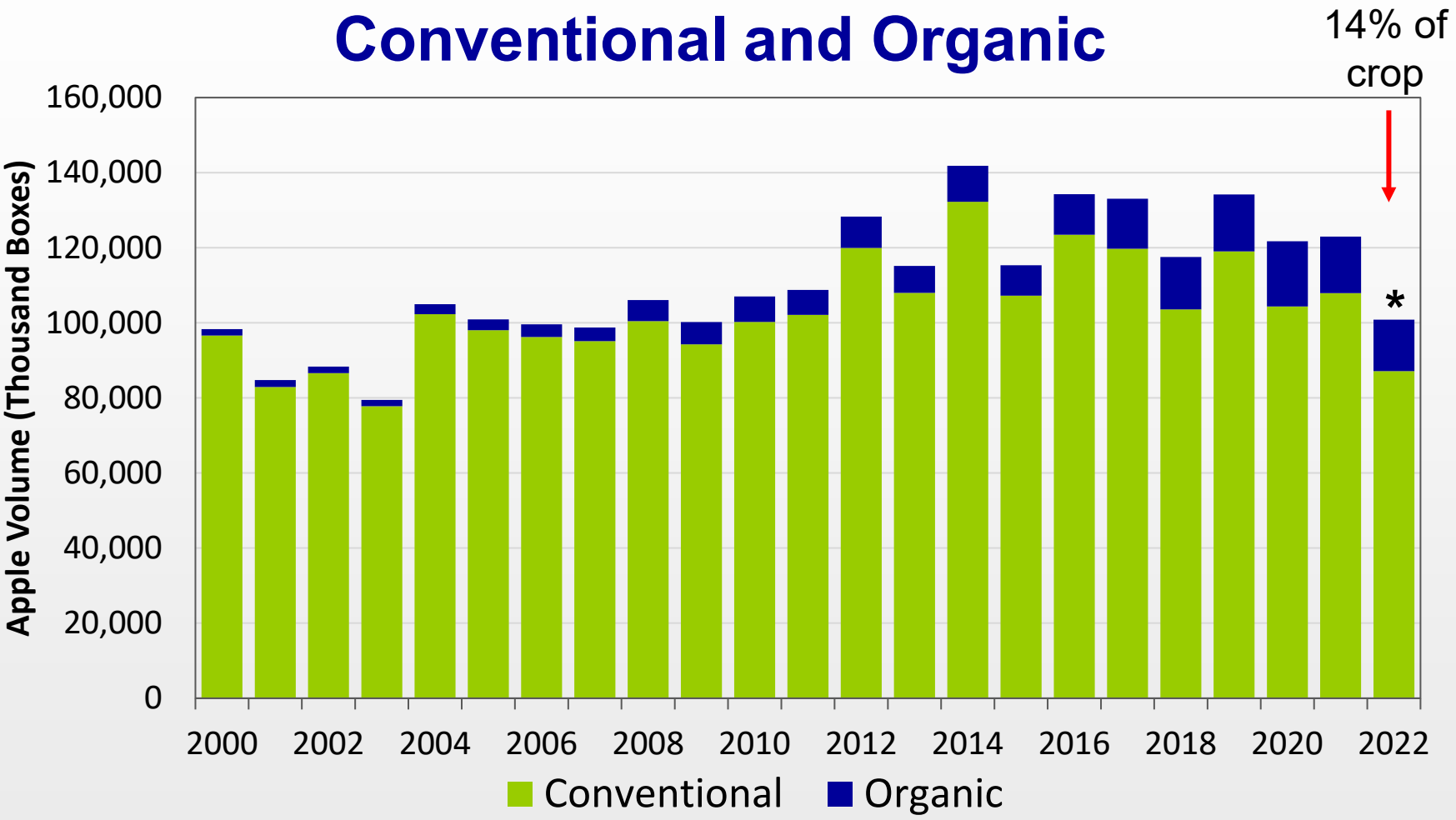
- Total shipped organic boxes / total certified acres
- Includes young and non-bearing acres
- Does not account for processor or other diverted fruit

In 2022, certified organic apples represented about 16% of all apple acres in the state. This has translated to about 13% of the state crop (slides 36 and 37). An unknown amount of organic fruit goes to the processor market or is sold as conventional for various reasons.

A strong trend of increasing shipments has occurred since a big jump in 2008 (slide 38),but is leveling off. The increase has been driven by dramatic rises in ‘Gala’, ‘Fuji’, and especially ‘Honeycrisp’ shipments which reached a new high with the 2021 crop (slides 39, 40). Despite the rapid rise in supply, prices generally rose during this period until 2016, then dropped and are now rebounding. The 2022 crop is quite small and thus prices are expected to rise (slide 38). The effect of alternate bearing can be seen from 2011-2016.

Washington Apple Volume

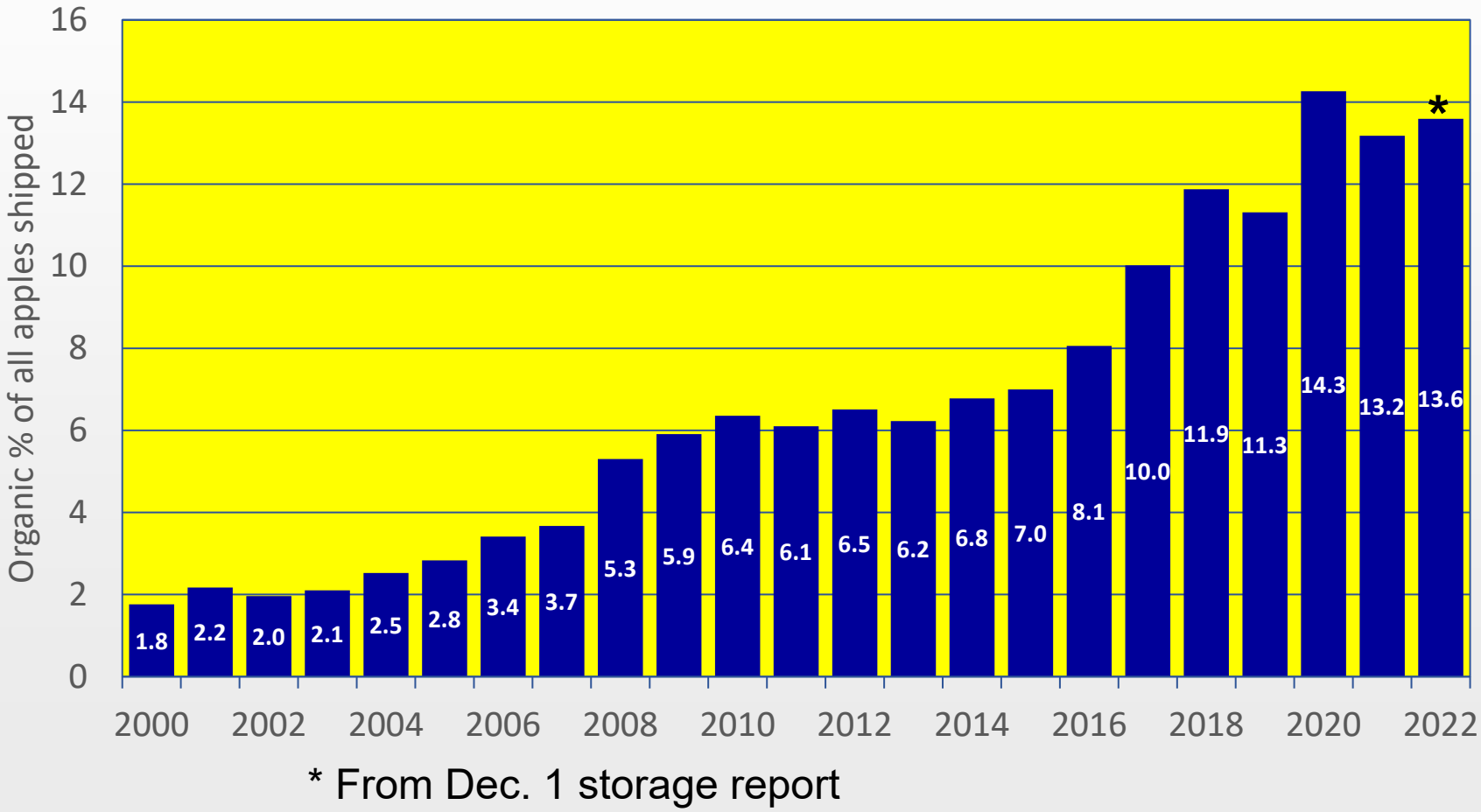
Conventional and Organic



* From Dec. 1 storage report

Data: WSTFA, WVTA, WGCH

Organic Share of Apple Shipments
Washington State

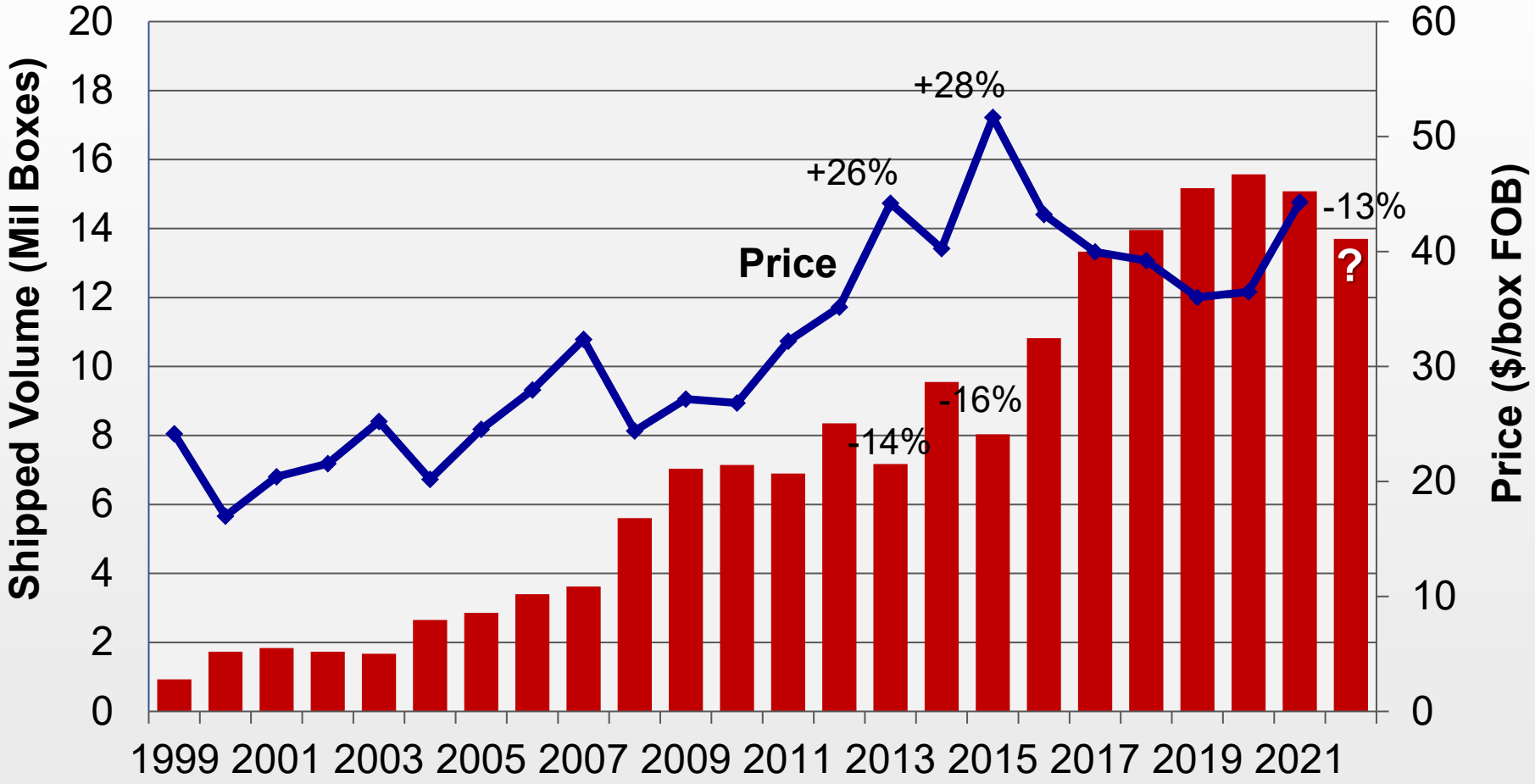


* From Dec. 1 storage report

Data: WSTFA, WVTA, WGCH

Organic Apple Sales

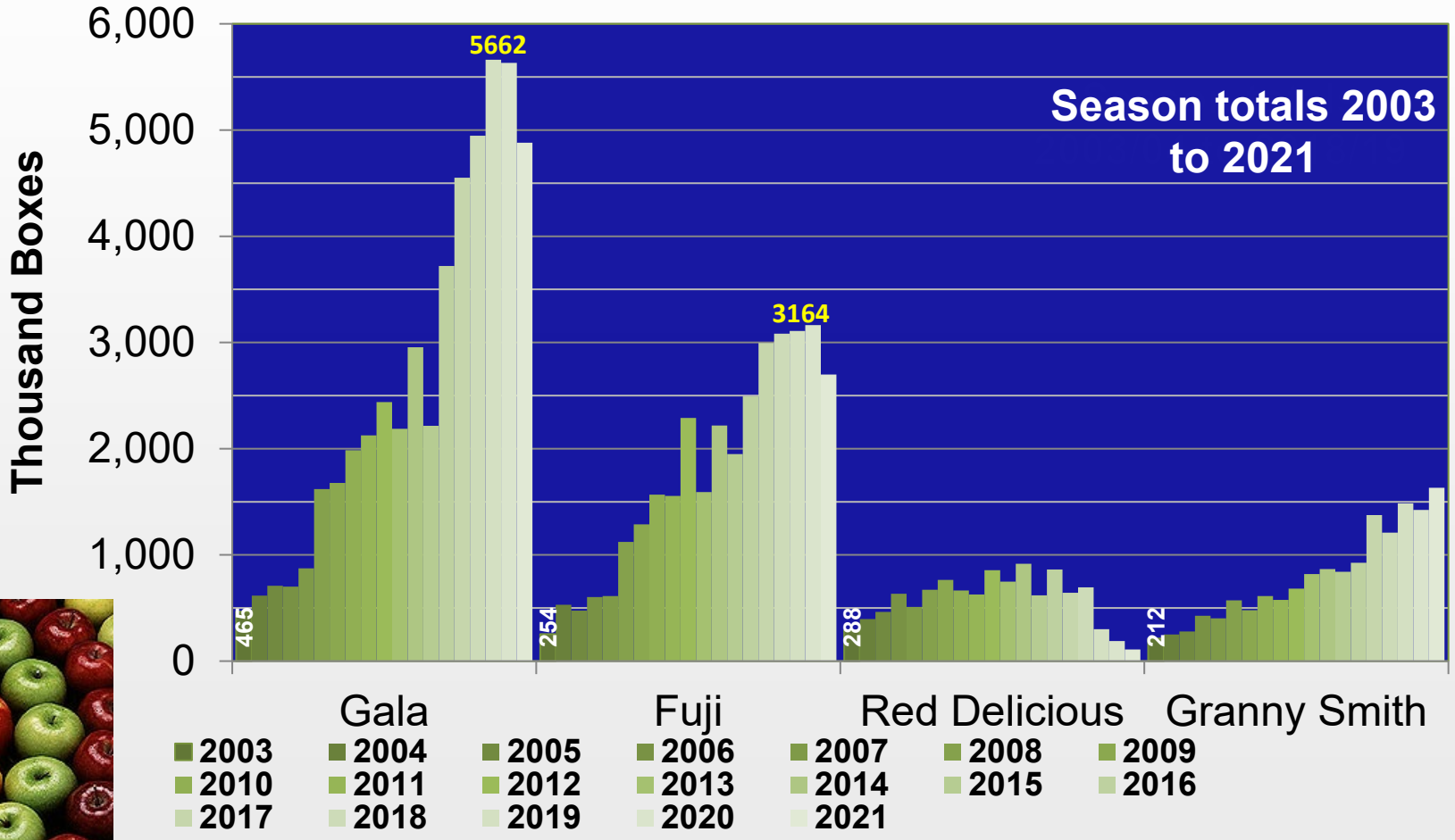
Volume and Price Trends - WA



40 lb box. Data: WSTFA, WVTA, WGCH; organic season average FOB history; priced boxes all grades ,sizes, storage

Total Shipped Organic Volume

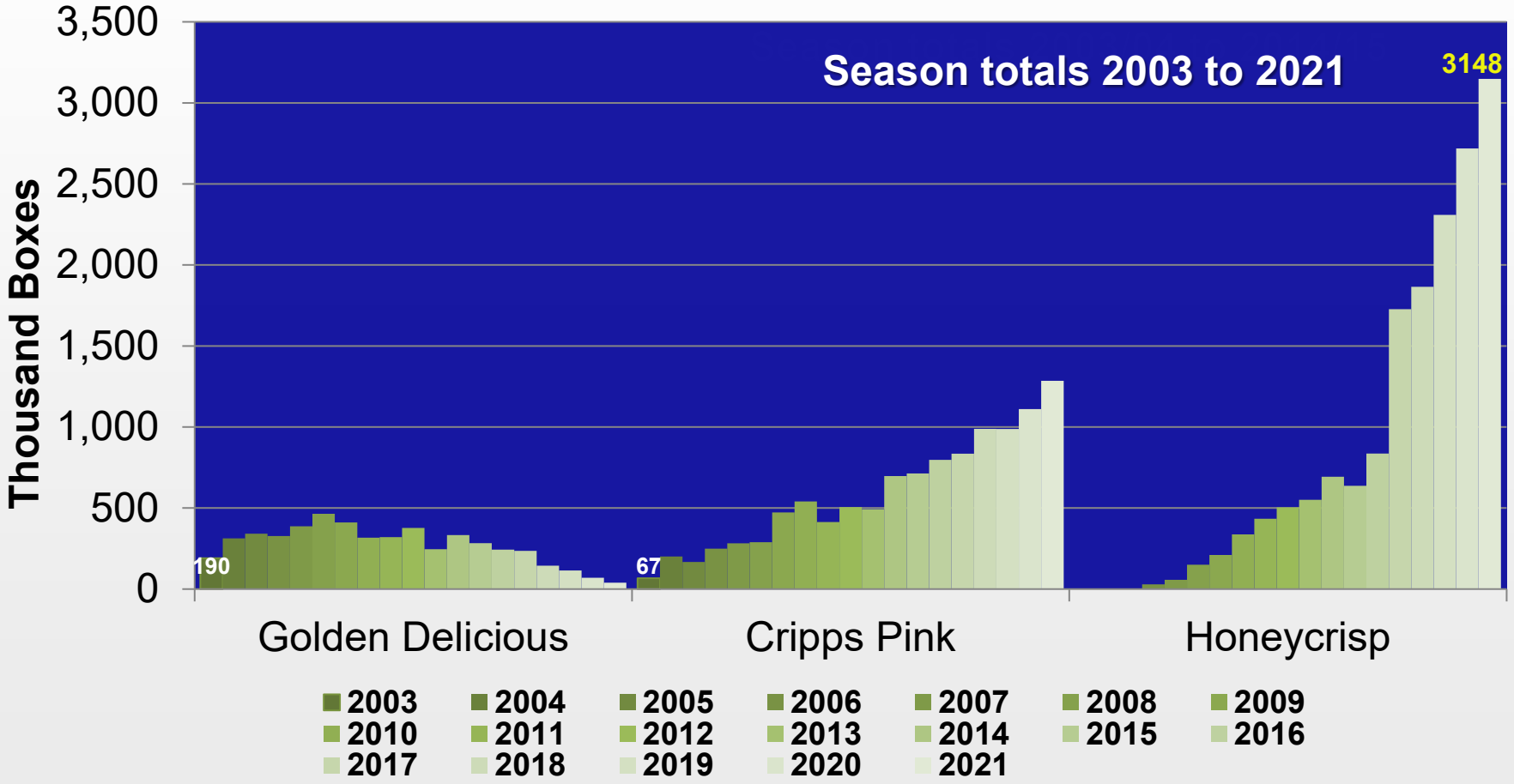
by year and variety, Washington State




ARS Photo

Data: WSTFA, WGCH, WVTA

Total Shipped Organic Volume
by year and variety, Washington State

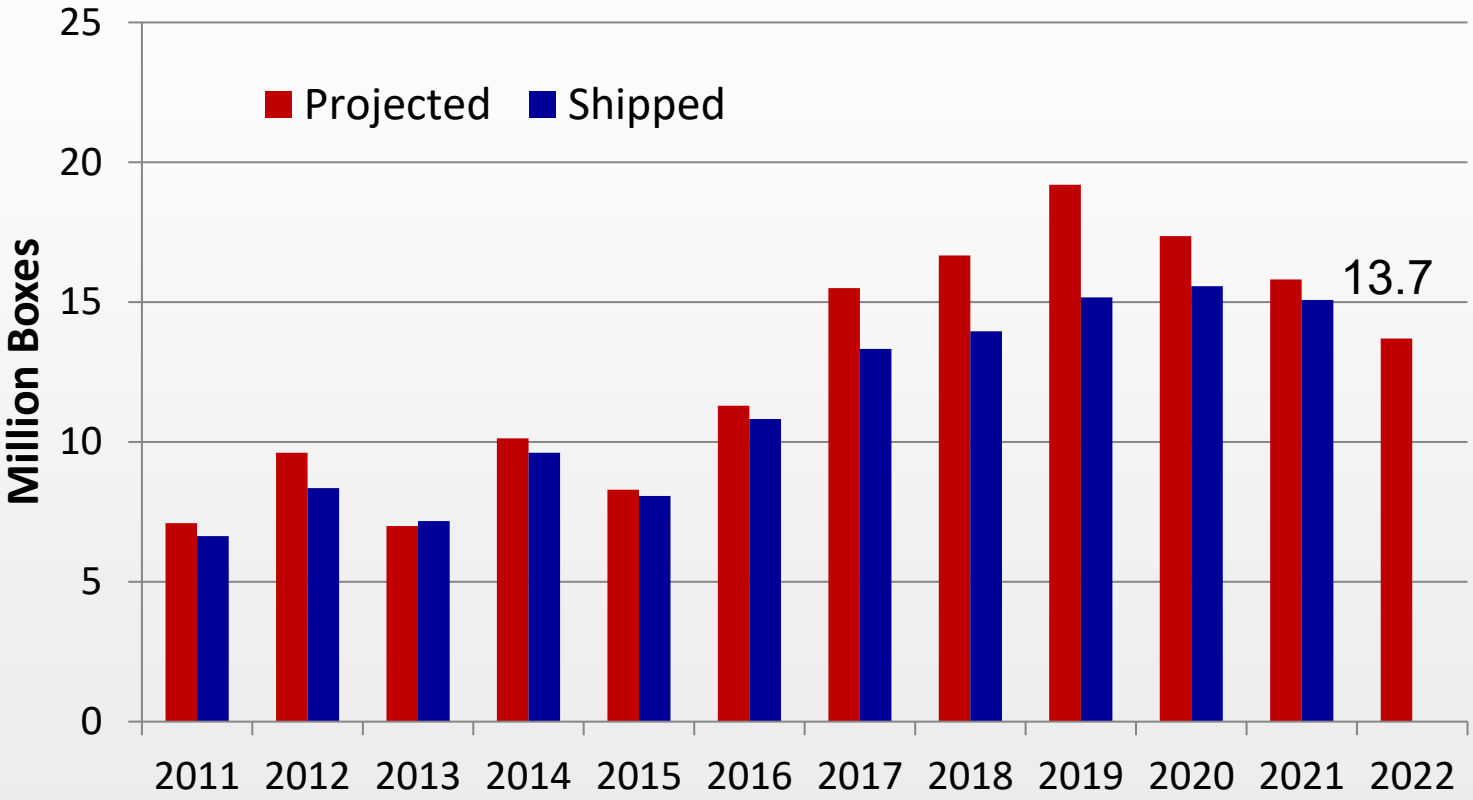


Data: WSTFA, WGCH, WVTA

The 2021 crop appears smaller than 2020 (comparing December storage report volumes), largely due to the intense heat wave during June 2021 (slide 42). The 2020 crop shipped a record number of boxes (15.57 million), a slight increase from the previous year. The difference between the Dec. 1 storage report indicated crop (red bars) and the final amount shipped (blue bars) is due to a combination of normal shrink, diversion to organic processing, and diversion to conventional markets (e.g., 'Red Delicious'). This difference was lower for the 2020 crop than in recent years.

Storing organic apples longer will be critical for marketing the larger crop in coming years (see Storage slides 81 to 85). New post-harvest technology is continually be tried, some of which is proving quite successful. The opportunity to sell more WA organic apples is illustrated by the sources of organic apples in groceries identified by USDA-AMS in August 2016 (slide 43).

Washington Organic Apple Crop Size



Comparison of recent organic apple crop size estimates (December 1) with actual season-end volume shipped.

Data: WSTFA, WVTA, WGCH

Organic Apples in U.S. Market
August 2016

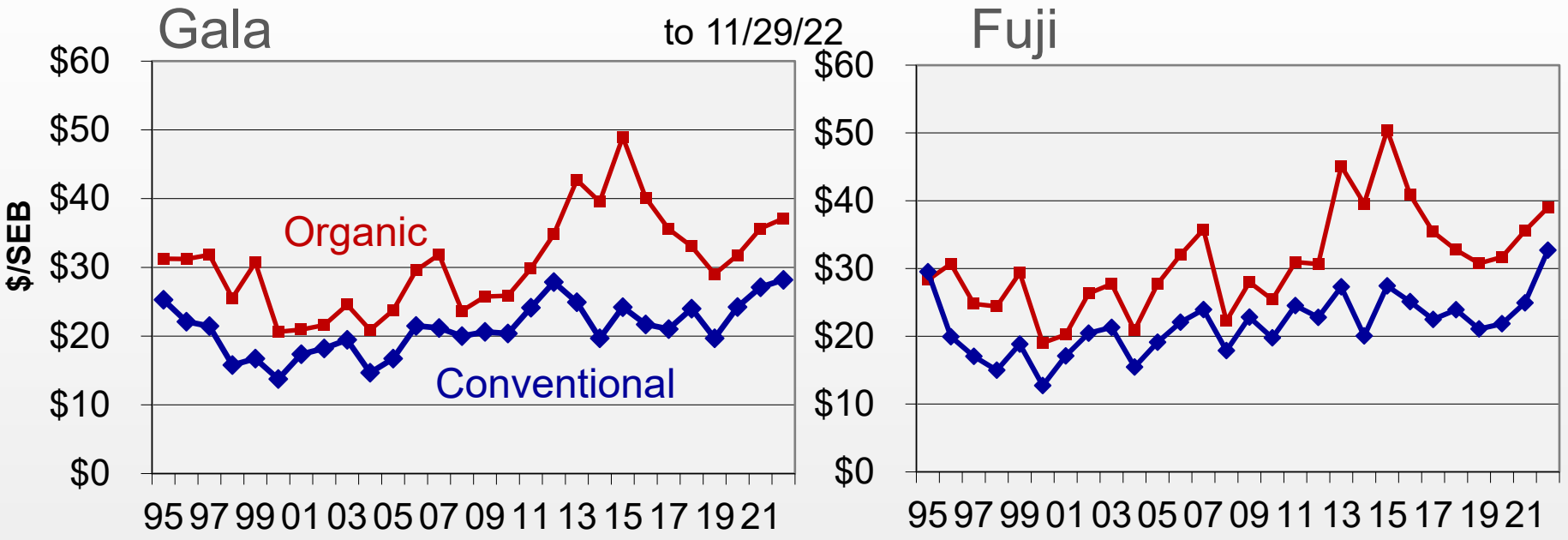
	Red D	Gala	Fuji	Brae	Pink	Zestar!®
Baltimore	WA					
Boston	ARG	WA	ARG	NZ	ARG	
Chicago	ARG	NZ	NZ	ARG	ARG	
San Fran.		CA, WA	CL, NZ		CL	OR

WA=Washington; CA=California; OR=Oregon; ARG=Argentina; CL=Chile; NZ=New Zealand

USDA-AMS national specialty crops organic summary, Aug. 11, 2016
https://www.ams.usda.gov/mnreports/fvdorganic.pdf

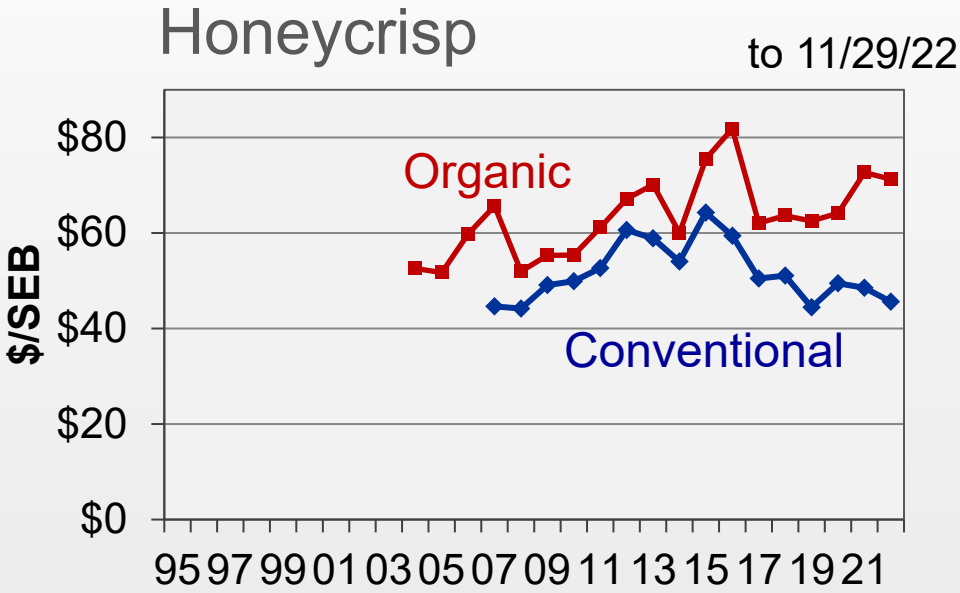
Prices for organic tree fruit have been collected by the industry starting in the mid-1990s, and now include most of the crop (reporting is voluntary). Organic prices are almost always higher than conventional, but the magnitude of the difference varies from year to year. However, the direction of price change from year to year was generally the same between the two, until after the 2012 crop, indicating that market forces then became less similar. The pattern has become similar again since 2019. Both organic and conventional experience some alternate bearing which affects supply and price. The prices on the following slides (45 to 49) are for fresh packed apples (40 lb box) for all sizes and grades, domestic and export. The trends for the past few years are shown in slide 50, with a downward trend for 'Gala' price. Organic price premiums are plotted in slide 51 as both the absolute dollar amount as well as the percent difference. The dollar premium per box was at record levels for several years but has declined with the substantially larger harvests.

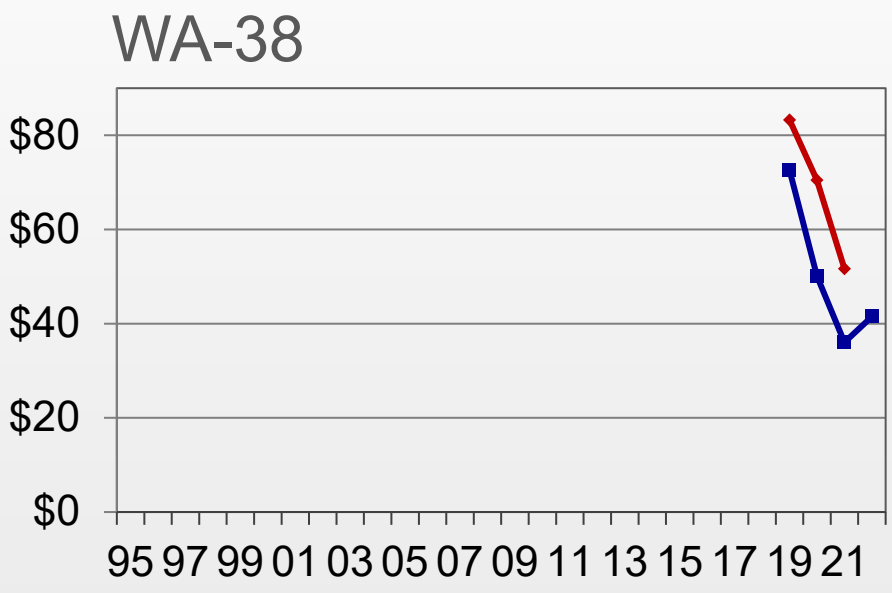
Price Trends
Washington Apples



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

Price Trends
Washington Apples



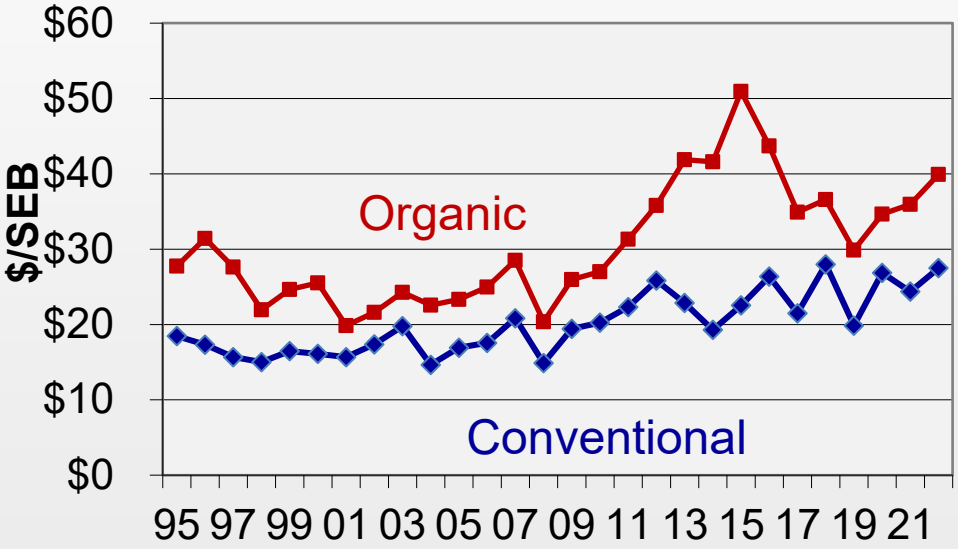


Data: WSTFA, WGCH; FOB averages, all storage, grades, sizes. Annual data points represent season averages: season runs approx. Sept 1 to end of Aug.

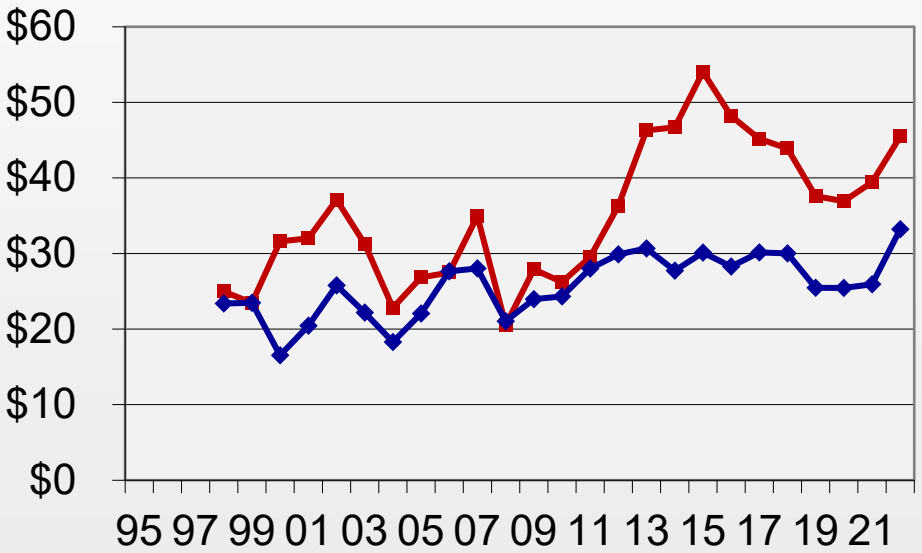
Price Trends
Washington Apples

Granny Smith

to 11/29/22

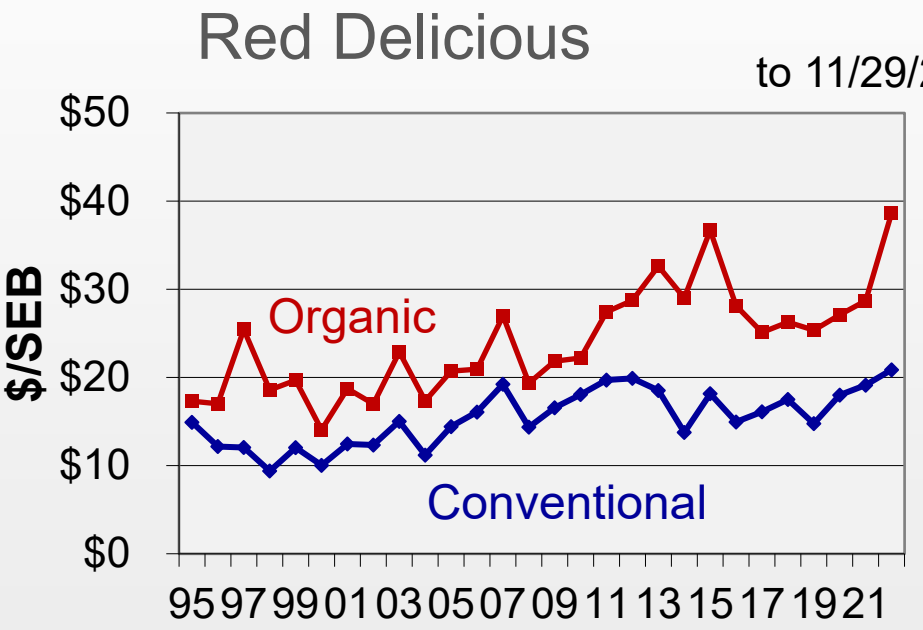


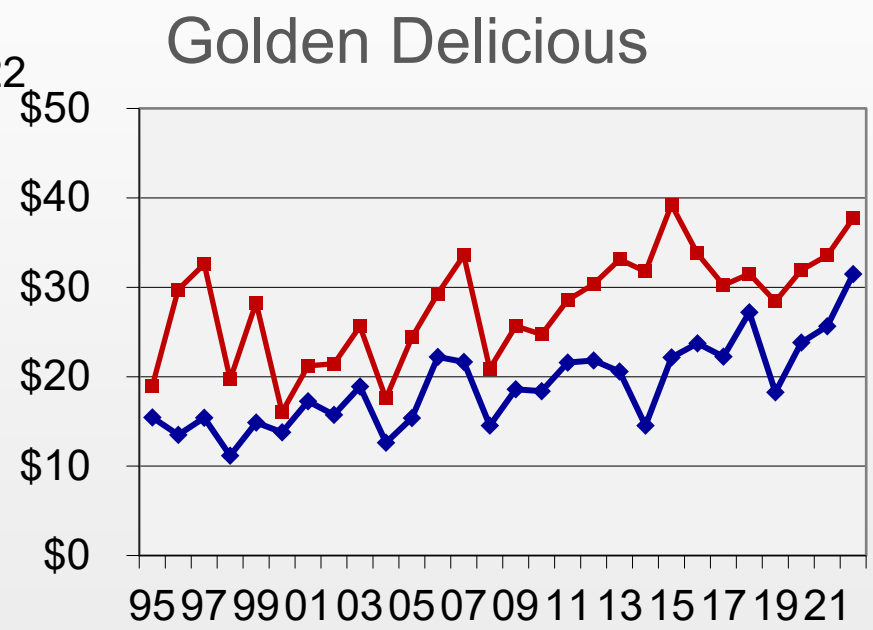
Cripps Pink



Data: WSTFA, WGCH; FOB averages, all storage, grades, sizes. Annual data points represent season averages: season runs approx. Sept 1 to end of Aug.

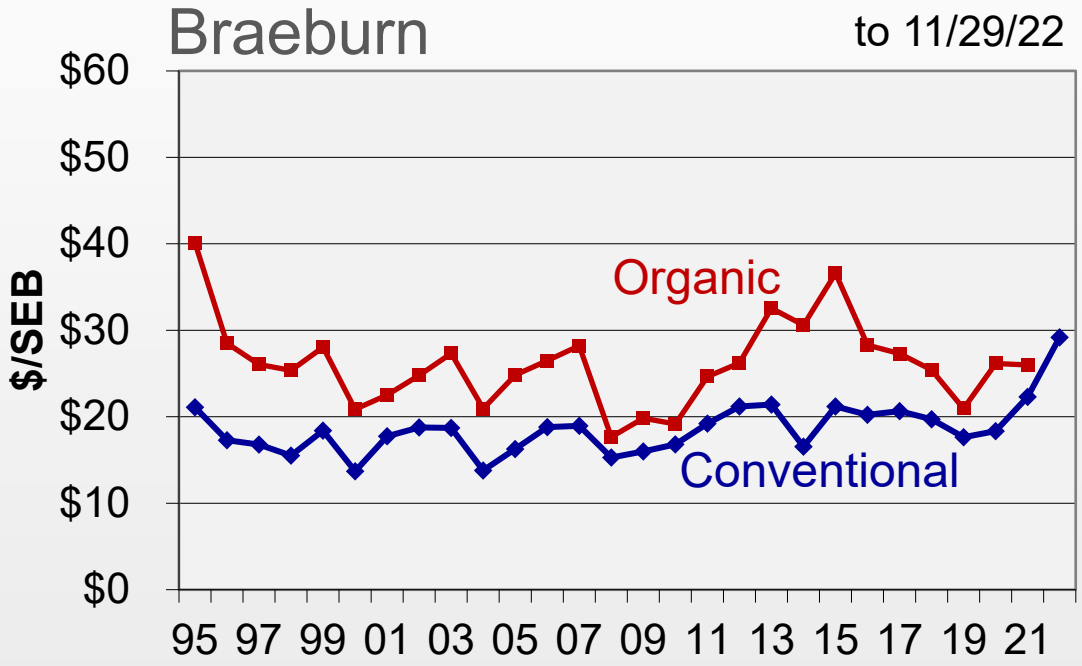
Price Trends
Washington Apples





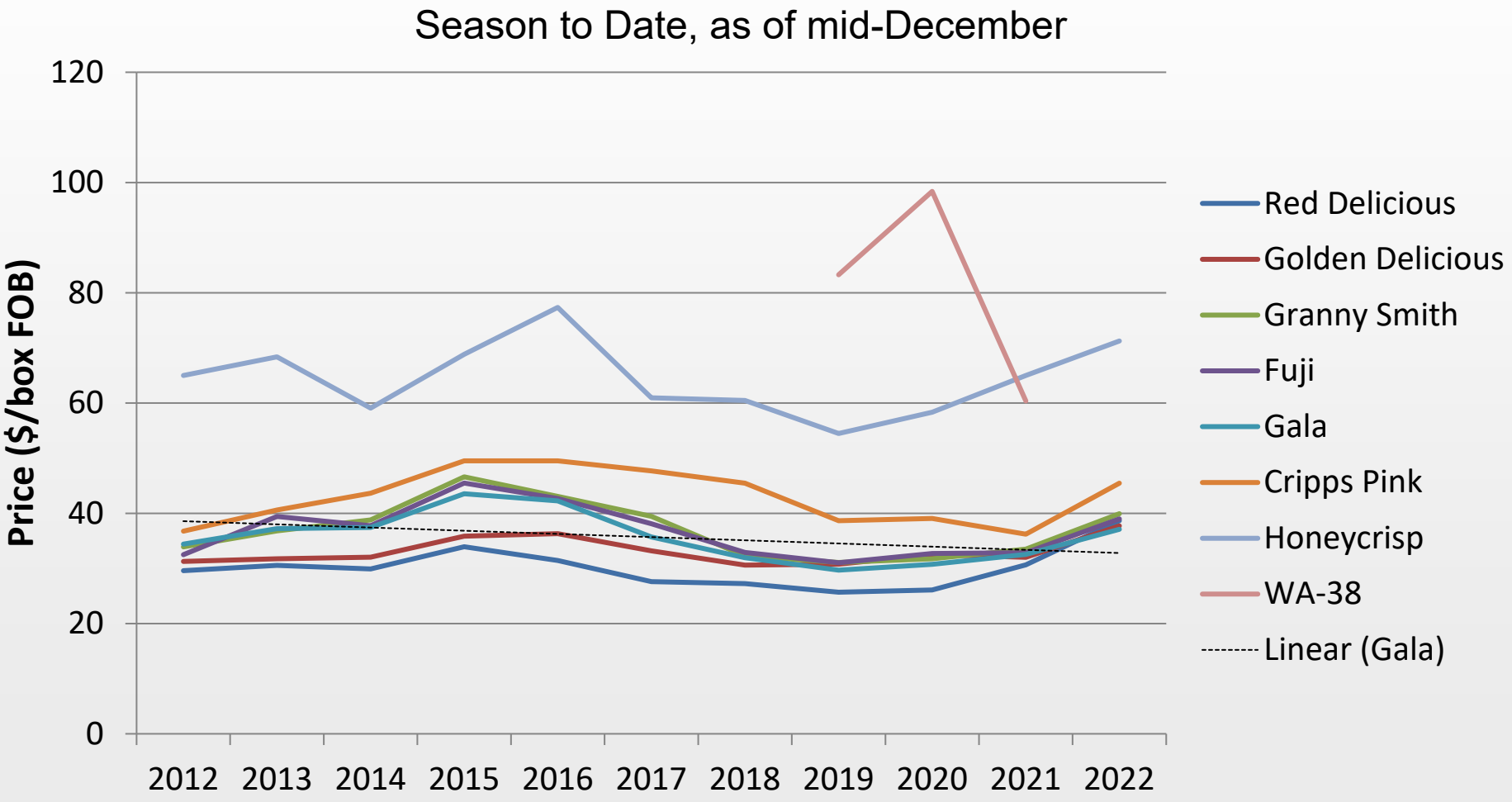
Data: WSTFA, WGCH; FOB averages, all storage, grades, sizes. Annual data points represent season averages: season approx. Sept 1 to end of Aug.

Price Trends
Washington Apples



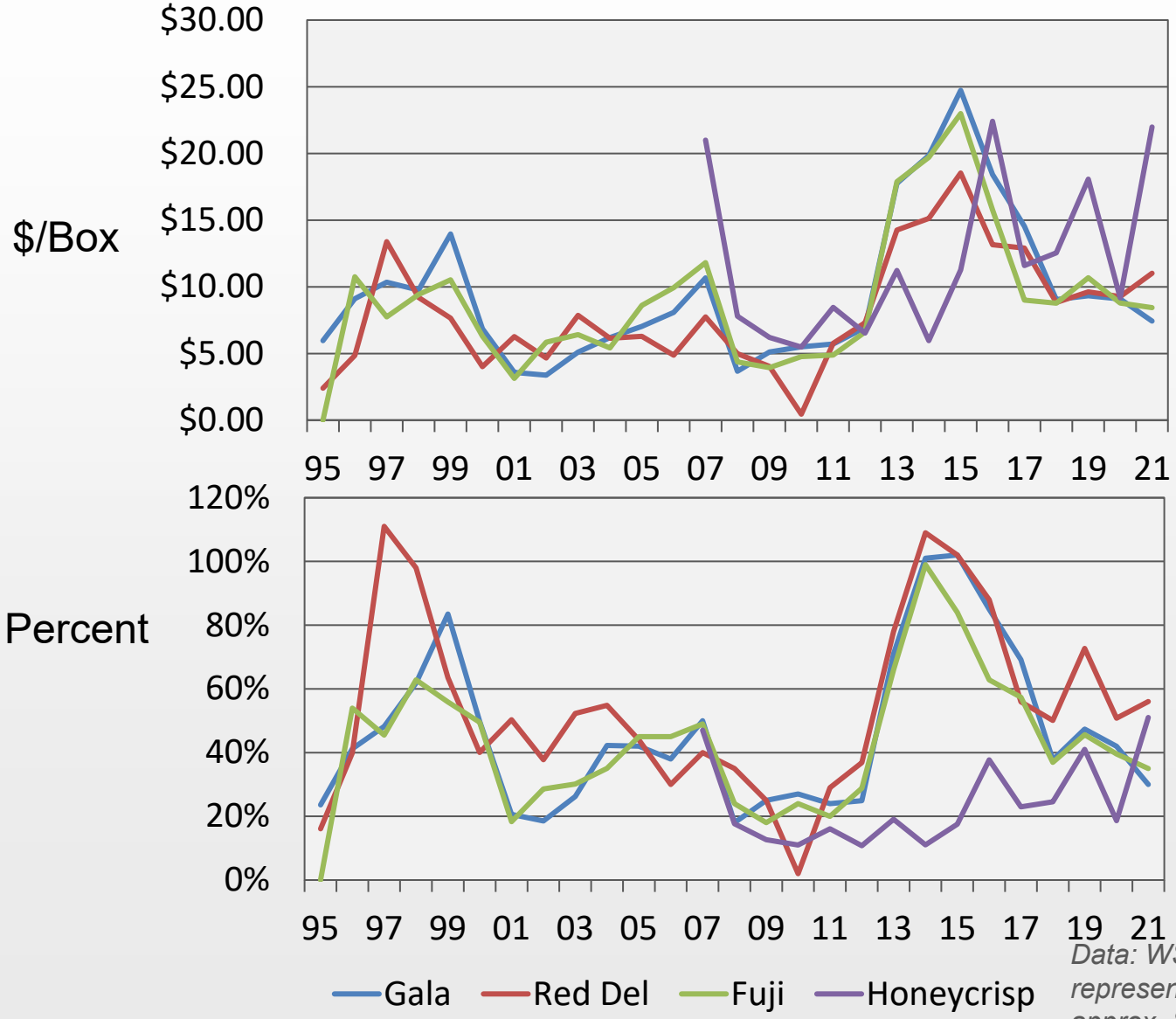
Data: WSTFA; FOB averages, all storage, grades, sizes. Annual data points represent season averages: season runs approx. Sept 1 to end of Aug.

Price Trends
Washington Organic Apples



Data: WSTFA, WGCH; FOB averages, all storage, grades, sizes.

Organic WA Apple Premiums

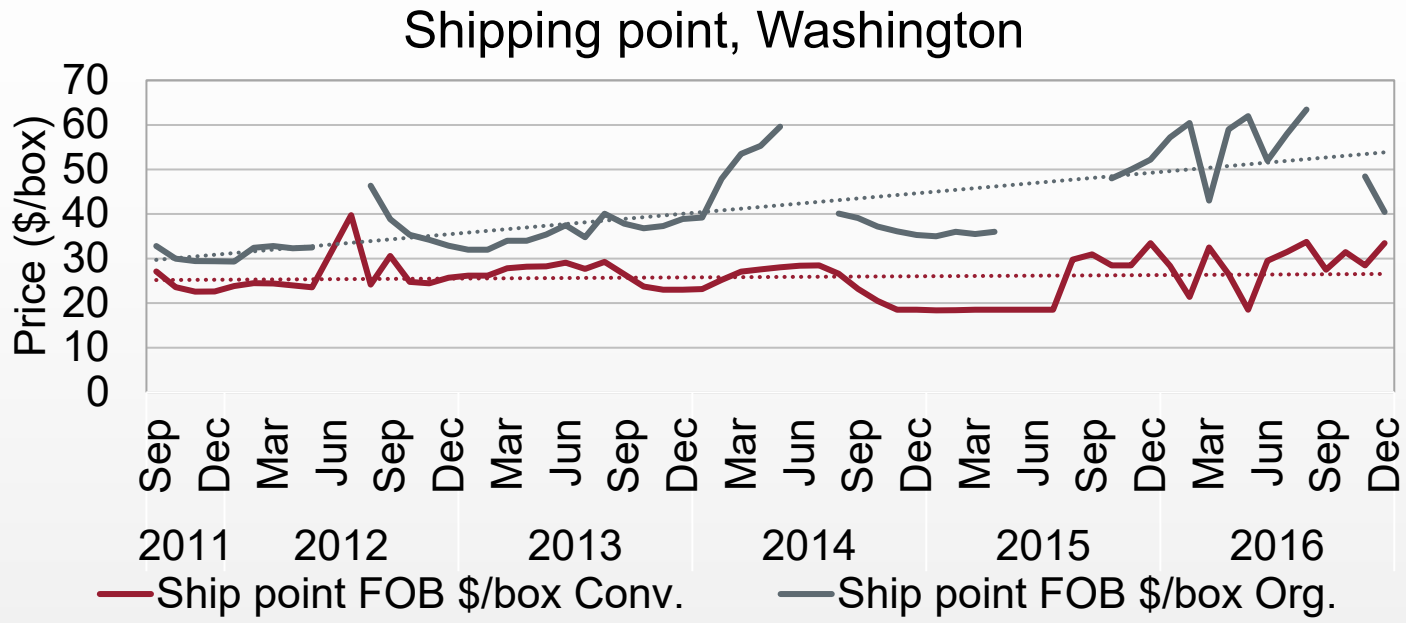


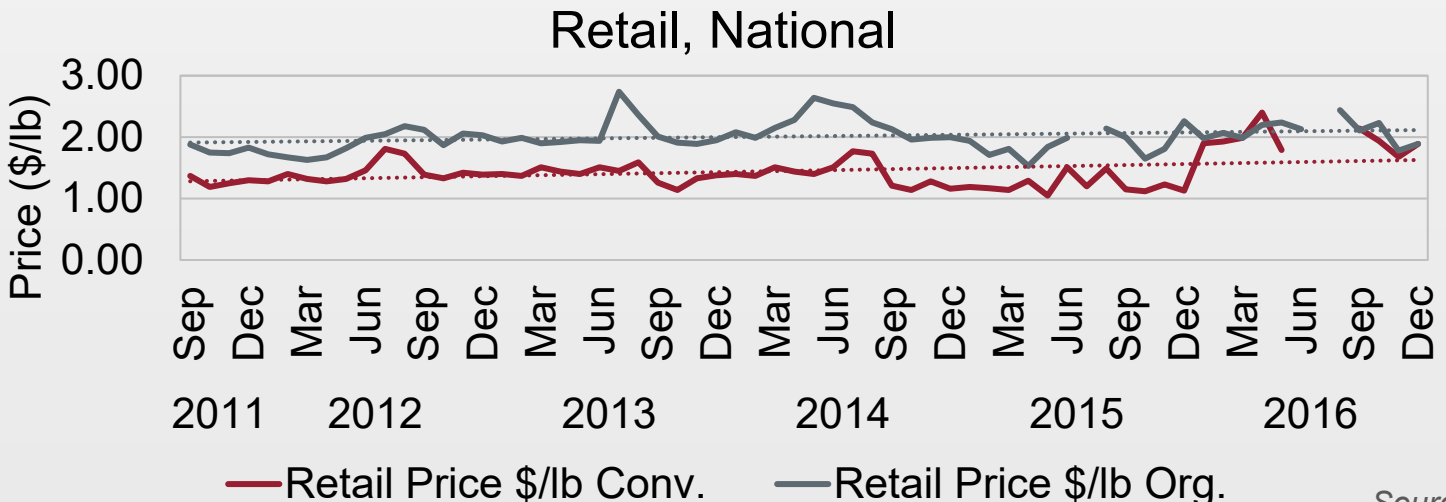
Premiums are expressed as the price difference between organic and conventional, as $ per box, or as a percent.

Data: WSTFA, WGCH. Annual data points represent season averages: season runs approx. Sept 1 to end of Aug.

The USDA Agricultural Marketing Service (AMS) tracks data reported to them for various commodity prices at the point of shipment (FOB) and the retail price (based on grocery store advertisements). In slide 53, monthly price trends over 5 marketing seasons are plotted for 'Gala' apple, for both conventional and organic. A dotted trend line is also included to make the general trend more obvious. Organic shipping point prices trended up, while conventional prices were flat. In contrast, retail prices trended up for both types. Organic prices have dropped in subsequent years. Given that the cost of production is generally trending upwards, especially for labor, the implication for growers is that prices will no longer cover costs at some point, which has occurred for some varieties (see Economics slides 86 to 94). Gaps in the shipping point data point out where the WA supply of organic apples has been sold out.

Organic Gala Apples

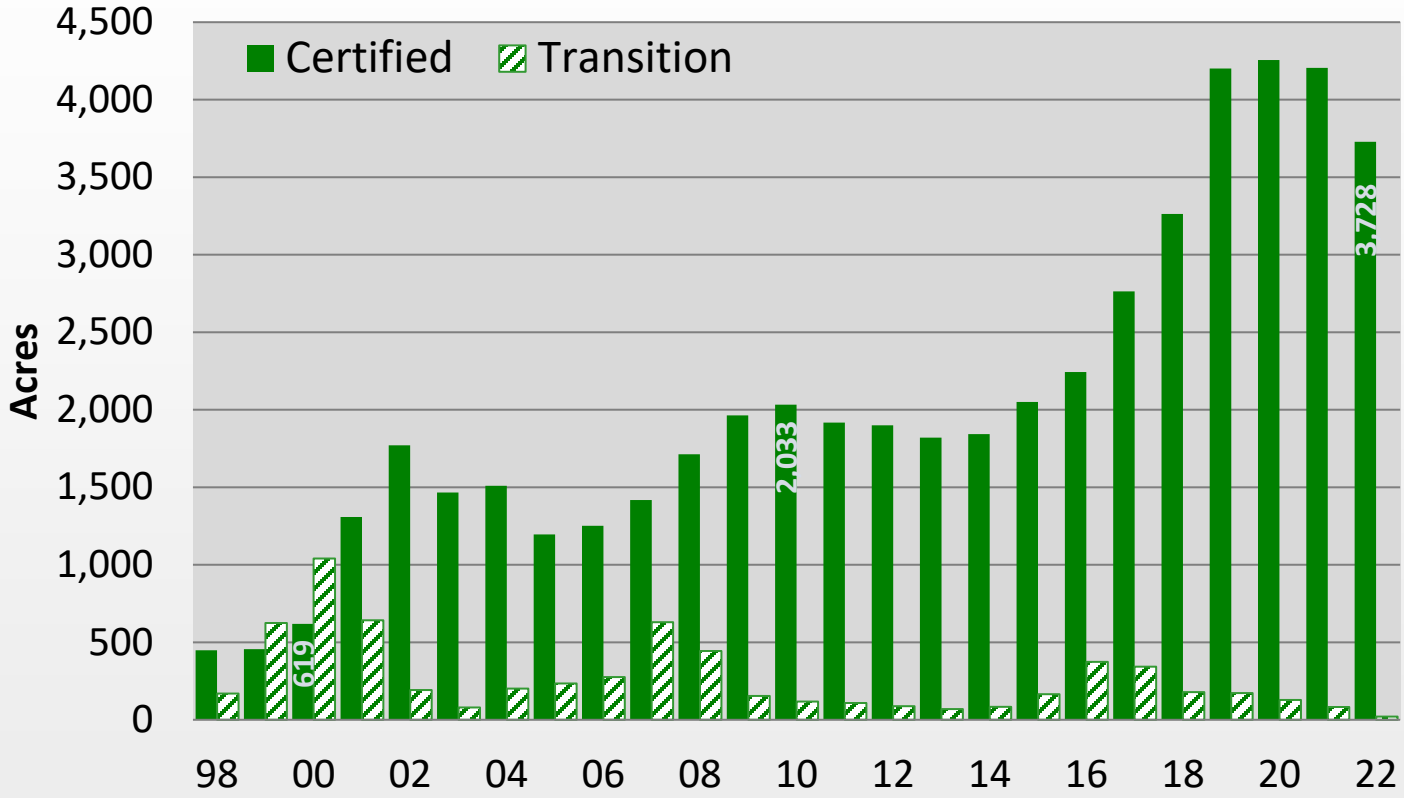




Source: USDA-AMS

Similar data as for apple are presented for organic pear in Washington in the next slides (55 to 64). Organic pear area has tended to be more stable over time than apple or cherry. Only a few pear varieties are currently in demand by the market, and pear consumption in general in the U.S. is much lower than apple. Pear orchards tend to be kept in production for many years (50+ years is not uncommon) and renewal to the hottest new variety or planting system is still limited. While fire blight is a serious threat to all pear producers in Washington, it is relatively less so than in most other parts of the country, leading to a large percent of all organic pears being produced here or in California. Washington is the leading producer of conventional and organic pears in the U.S. Organic pear prices and volume have risen since 2009 in a pattern similar to apple. Record volume was shipped in 2020, the crop was smaller in 2021, and the 2022 crop may set a new record.

Organic Pear Acreage
Washington State

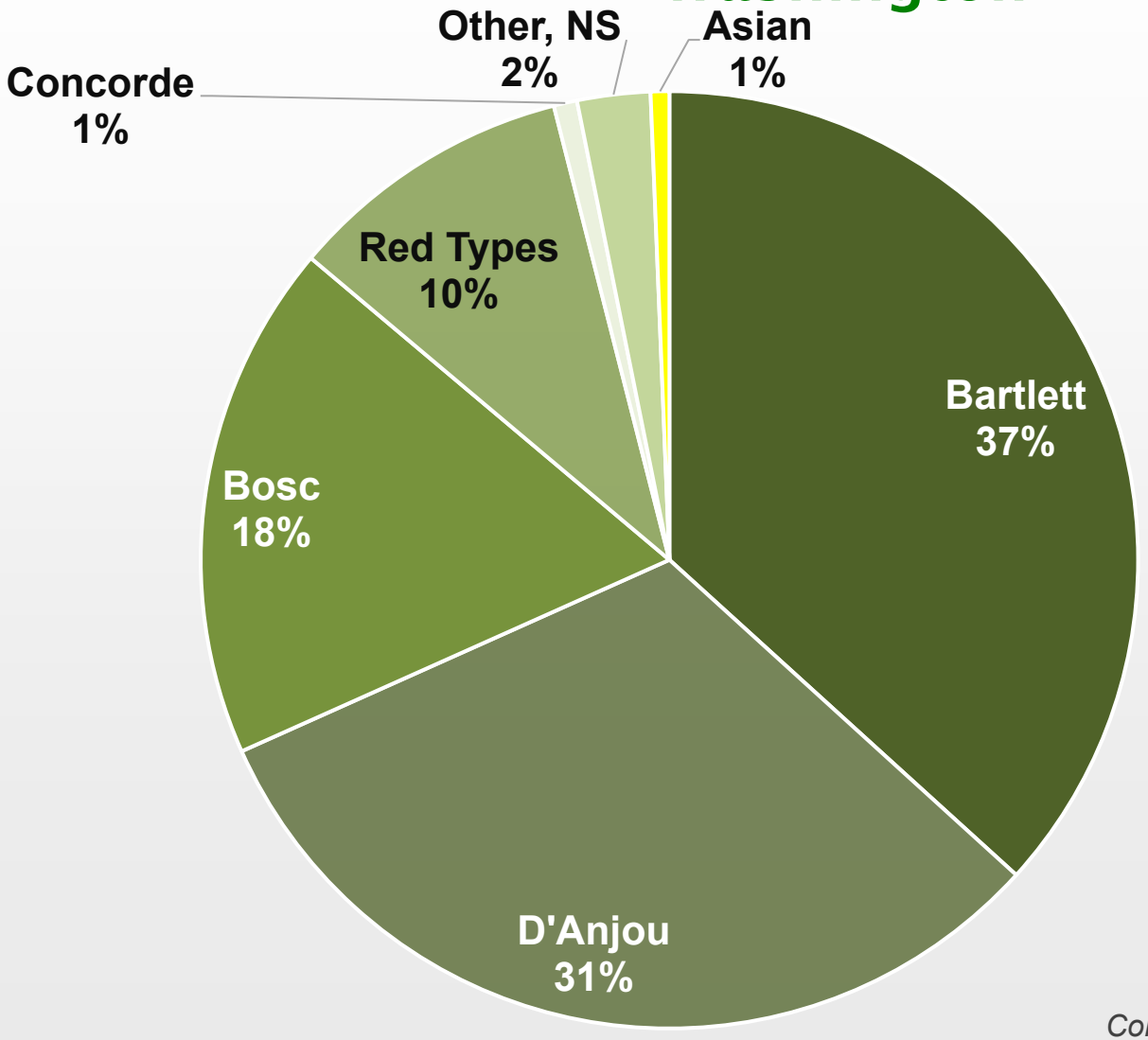


2022 organic = 18% of total WA pear acreage
(based on WA-NASS 2017 value of 20,965 pear acres)

Combined certifier data

2022 Organic Pear Acres by Variety

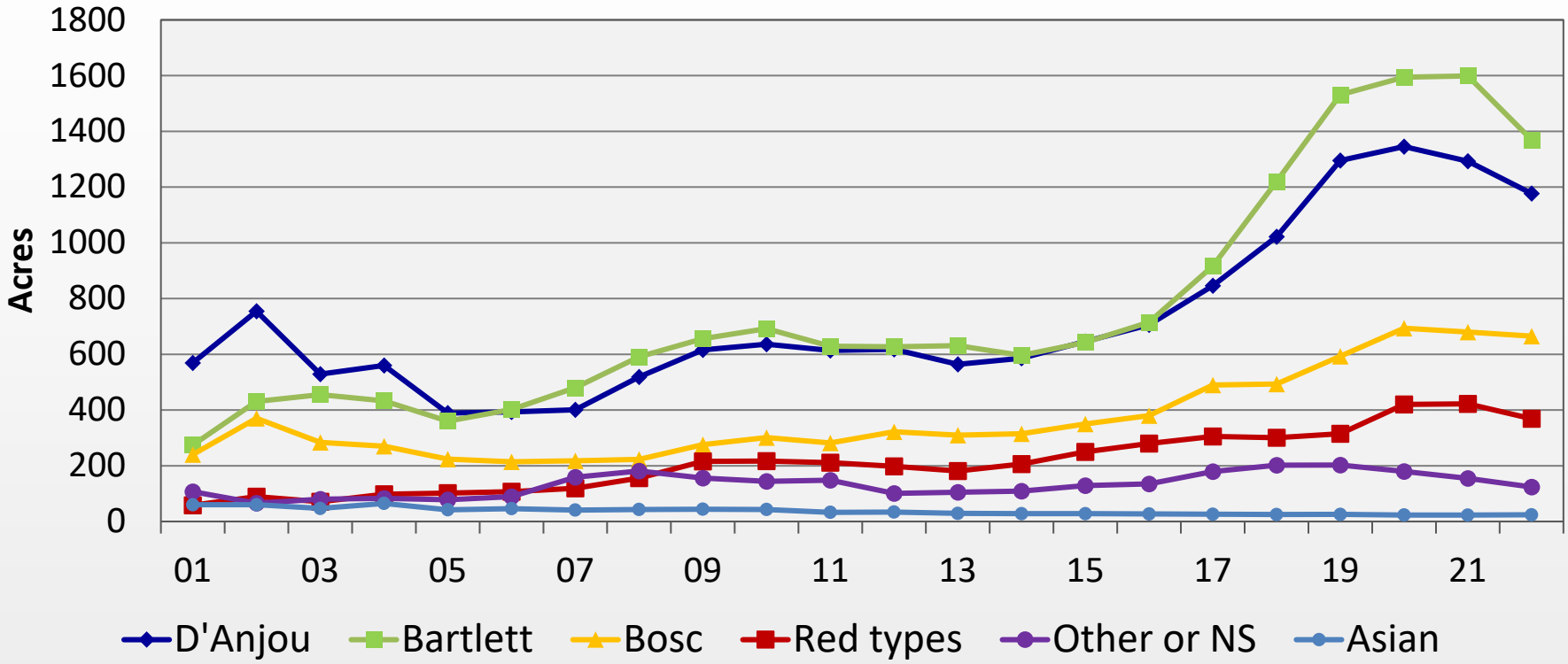
Washington



Combined certifier data; NS = not specified

Organic Pear Variety Trend

Washington State



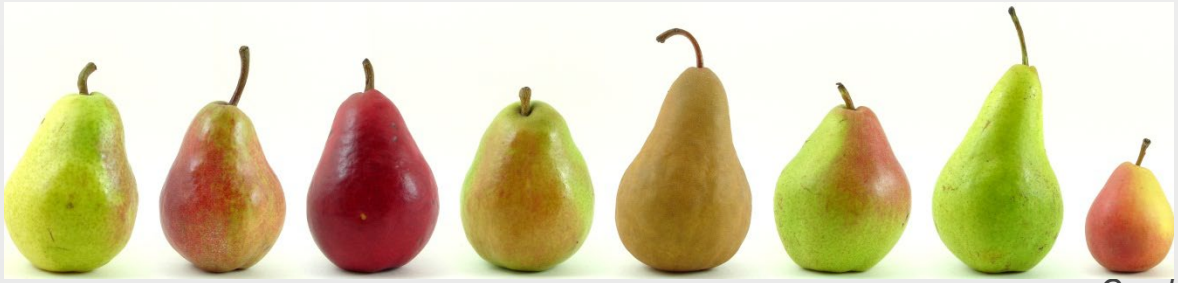


Photo: Agyle

Combined certifier data

Organic Specialty Pears
Washington State 2022

- Over 10 varieties of organic pears and Asian pears grown in WA, from small to larger quantities.

- >25 ac: Concorde, Starkrimson, Red Bartlett, Red Anjou

- Small areas: Comice, Forelle, Perry, Red Clapp, Seckel, Taylors Gold, Asian

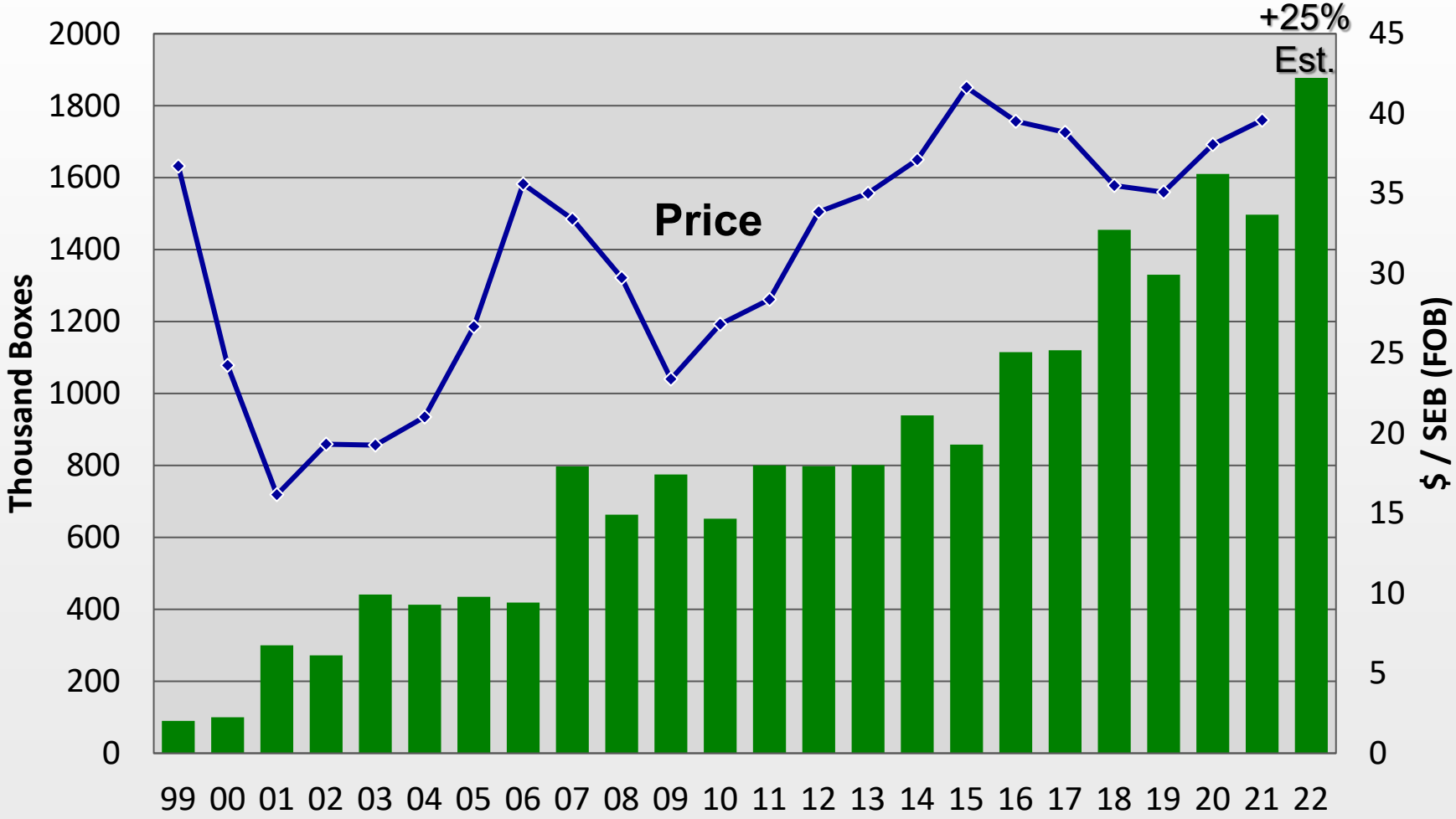
- **Varieties are listed on the WSDA producer list:**

http://agr.wa.gov/FoodAnimal/Organic/docs/wsda_cert_org_producers.pdf

WSDA data

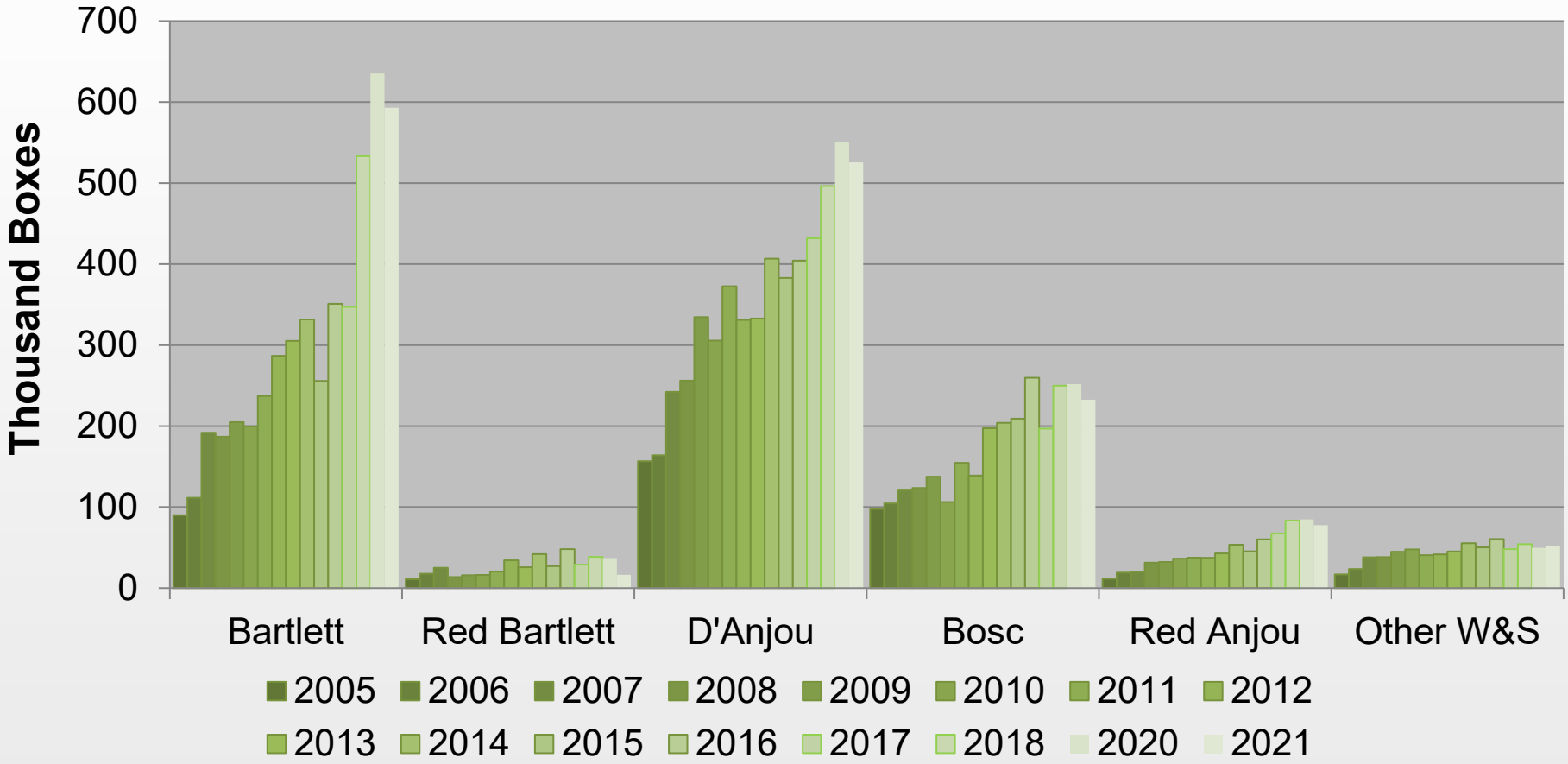
Organic Pear Sales

Volume and Price Trends



SEB = Standard Equivalent Box of 44 lb.
Data Sources: WSTFA, WGCHA & WVTA

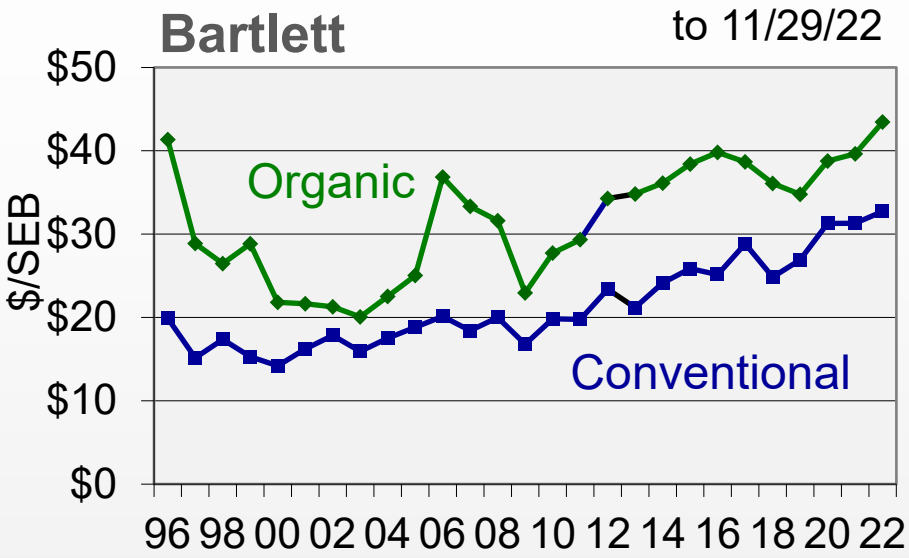
Shipped Organic Pear Volume
by year and variety, WA and OR

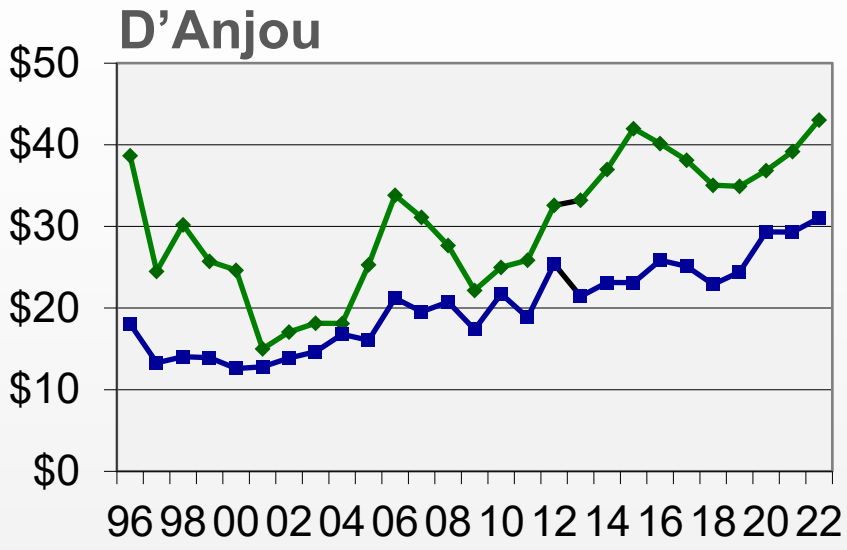


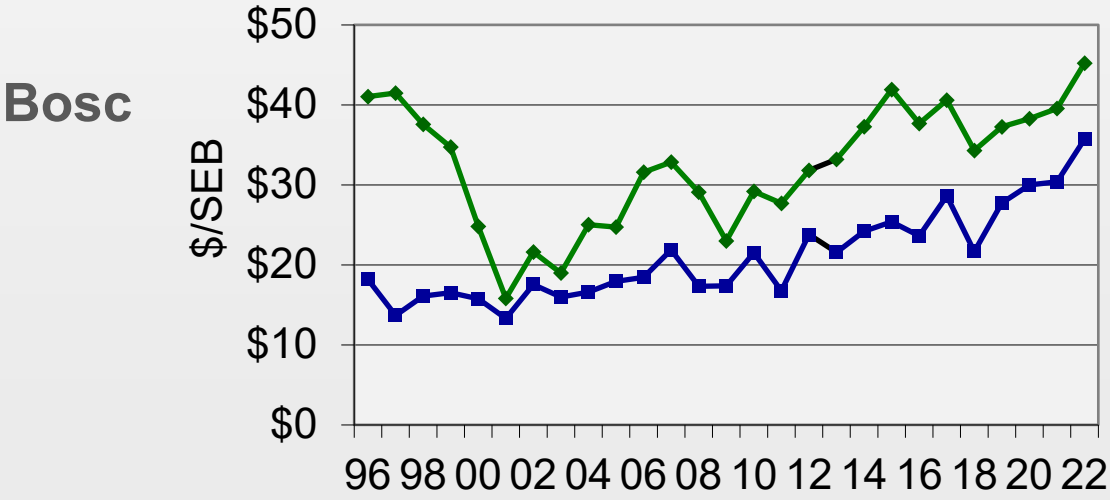
Organic volume ~10% of total NW pear volume;
OR organic volume ~ 15% of total organic

Standard Equivalent Box = 44 lb. Data Sources: WSTFA, PBNW, WGCH, WVTA

Price Trends Washington Pears



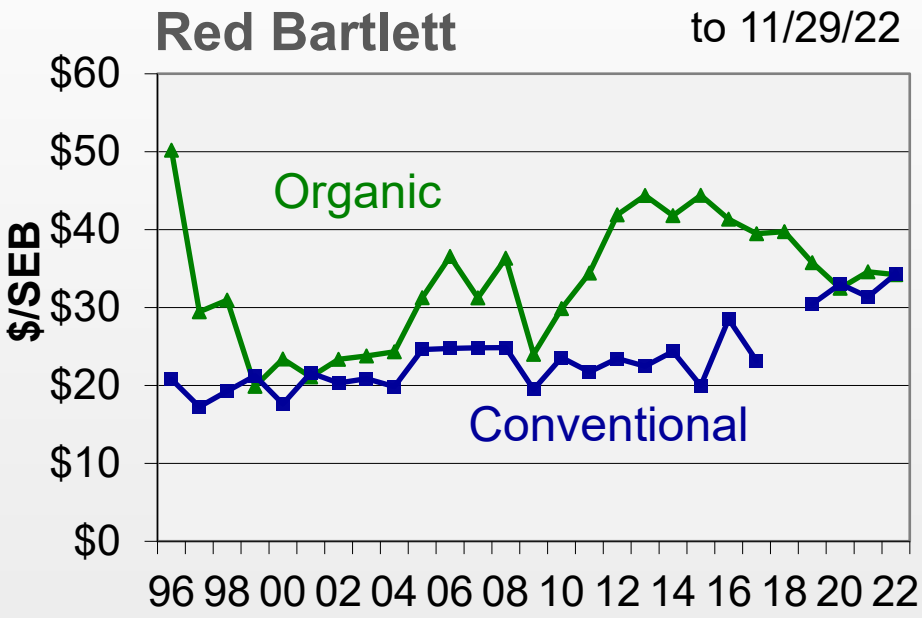


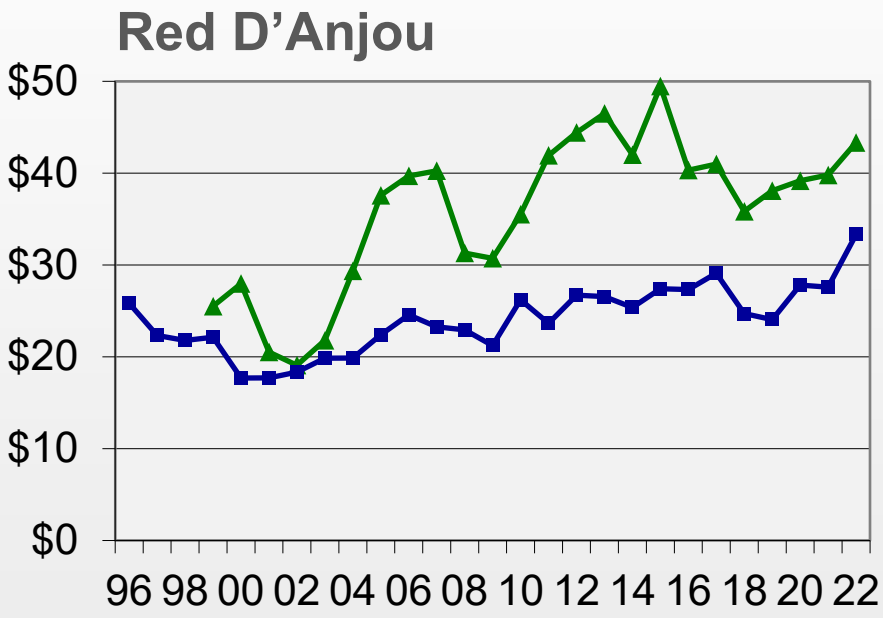


Bosc photo: US Pear

SEB = Standard Equivalent Box; Data: WSTFA, WGCH.
Annual data points represent FOB season price averages.

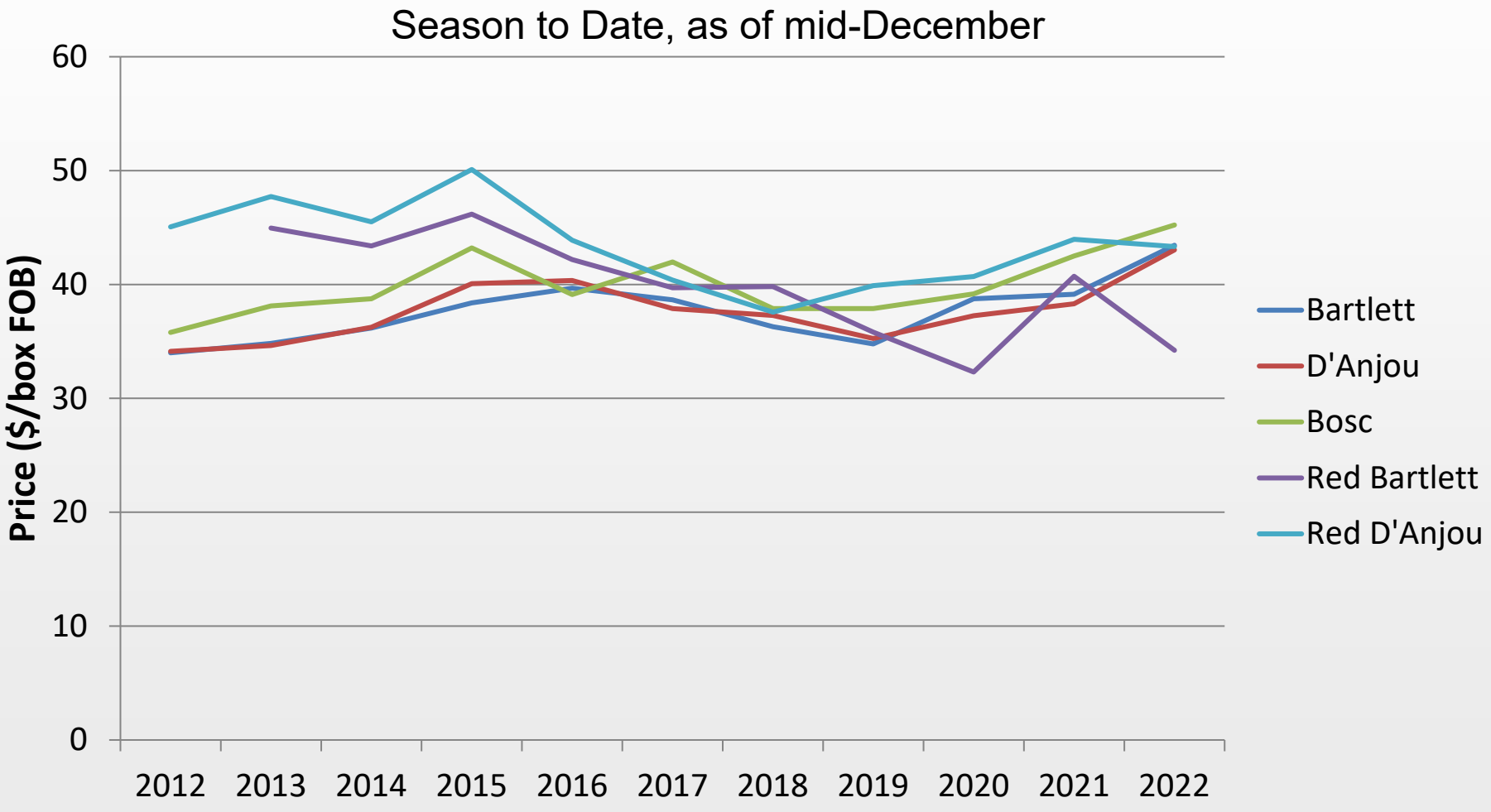
Price Trends
Washington Pears





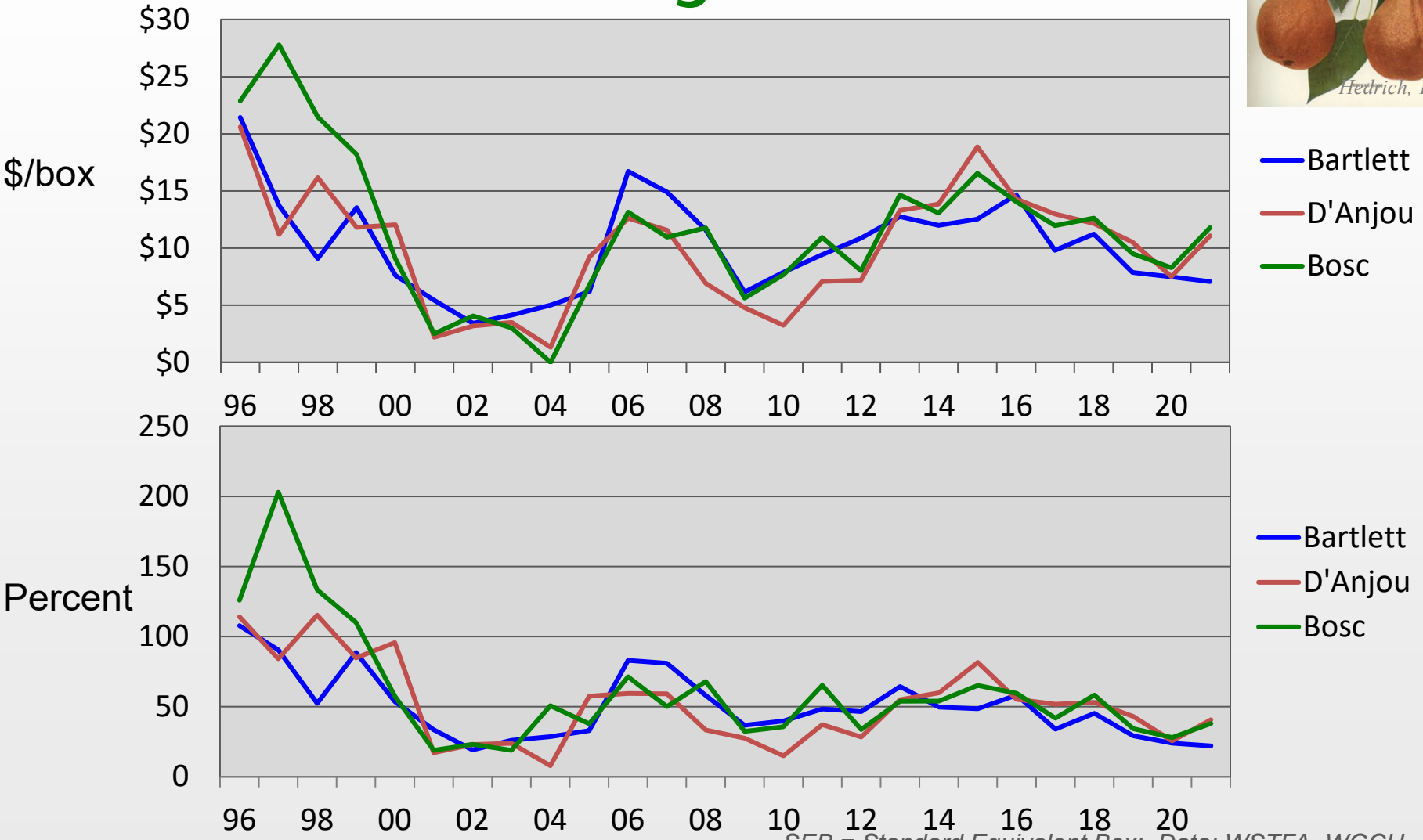
SEB = Standard Equivalent Box; Data: WSTFA, WGCH.
Annual data points represent FOB season price averages.

Price Trends
Washington Organic Pears



Data: WSTFA, WGCH; FOB averages, all storage, grades, sizes.

Organic Premiums
Washington Pears

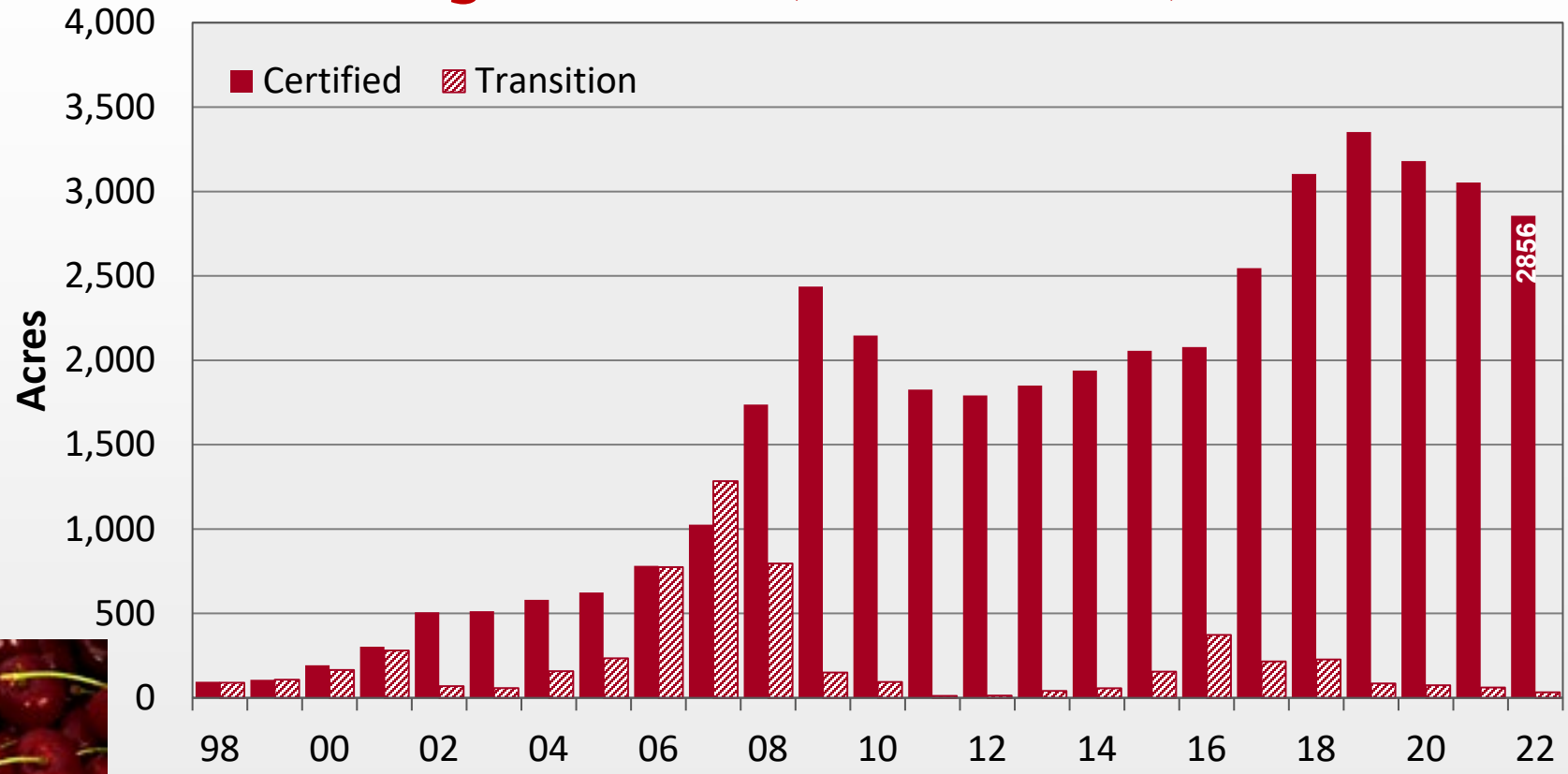


SEB = Standard Equivalent Box; Data: WSTFA, WGCH.
Annual data points represent FOB season price averages.

Washington leads the nation in sweet cherry production, both for conventional and organic. A key quarantine pest, the western Cherry Fruit Fly, was a major barrier to organic cherry production for many years. The development of the GF-120 control protocol (a biologically based insecticide) by Tim Smith, WSU Extension, led to major increases in organic cherry area in the mid-2000s. In 2008, the new pest, Spotted Wing Drosophila, was found in the state for the first time and has expanded statewide. This pest was not controlled by GF-120 and thus organic pest management was seriously disrupted. Growers rely on Entrust® insecticide and reliance on this sole product poses risk of resistance. Currently, Little Cherry Virus is threatening both organic and conventional cherry orchards.

Similar data as for apple and pear are presented for organic cherry in Washington in slides (66 to 70). Less than 1% of the crop was exported, primarily to Canada, and then Taiwan.The data include over 500 acres of organic tart cherries as well. Slide 71 shows the area trend for other organic soft fruit (peaches, etc.); no other data were available. Washington is second to California in the production of most of these other organic soft fruits.

Organic Cherry Acreage
Washington State (sweet + tart)

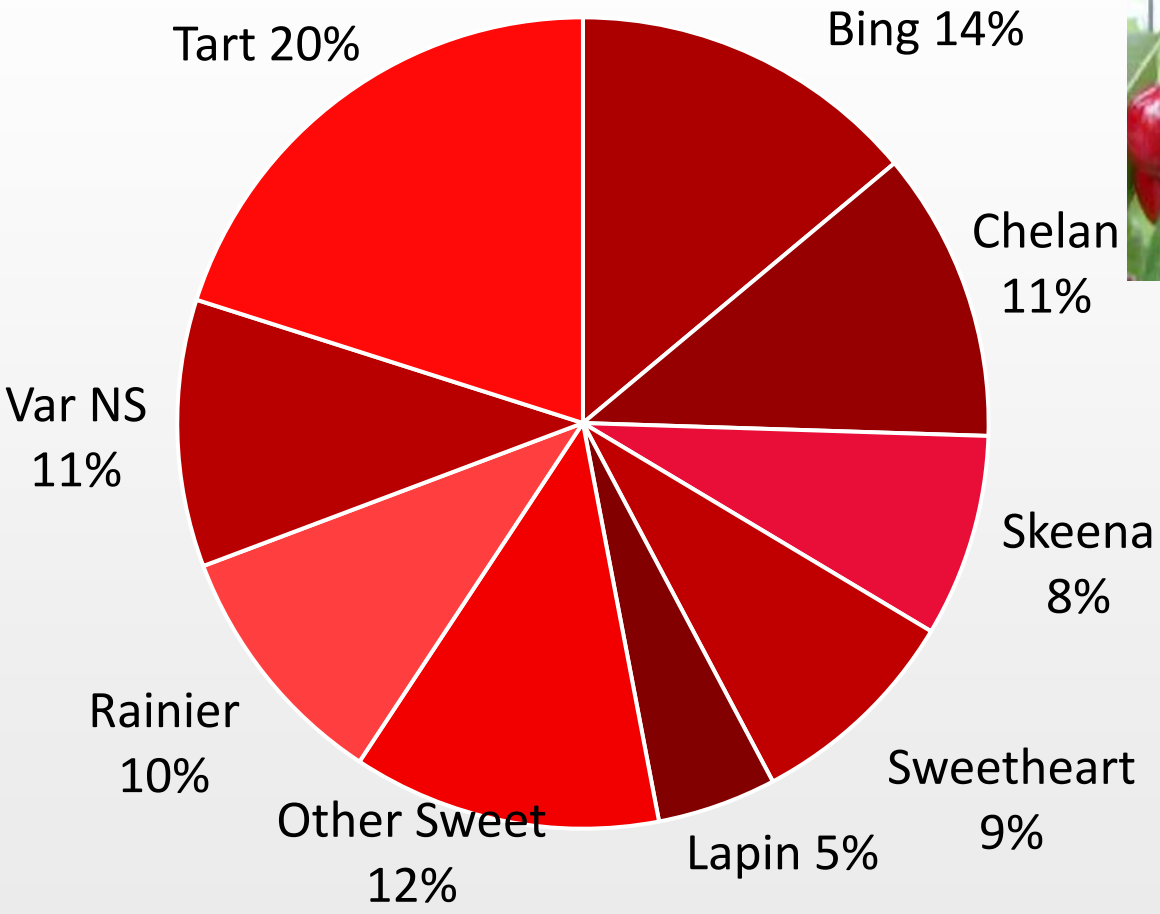


2022 organic = 6.3% of total WA cherry area
(based on 2017 WA-NASS estimate of 44,707 acres)

Combined certifier data

2022 Organic Cherry Variety Acres

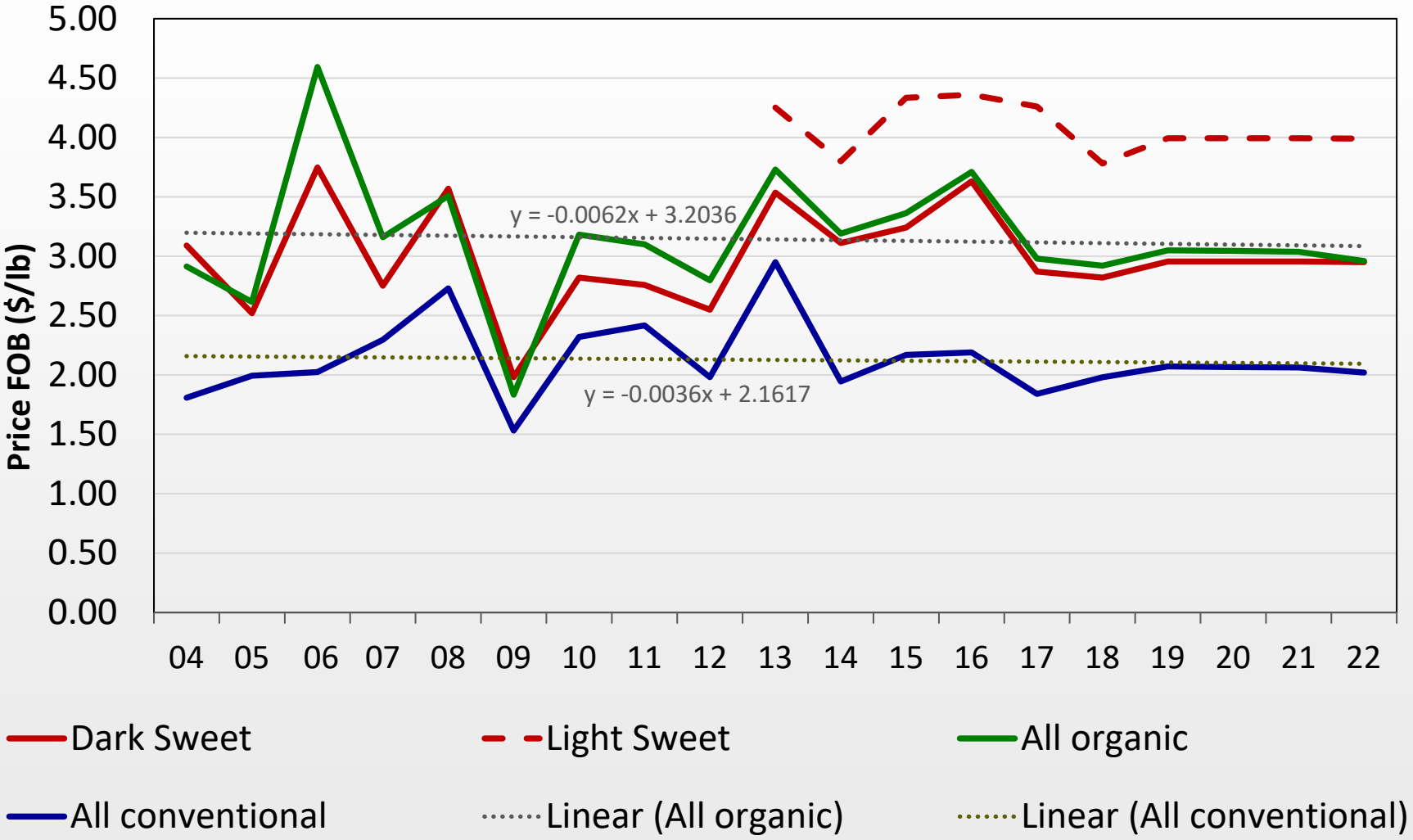
Washington State



11% of cherries not reported by variety in 2022 compared to 57% in 2008

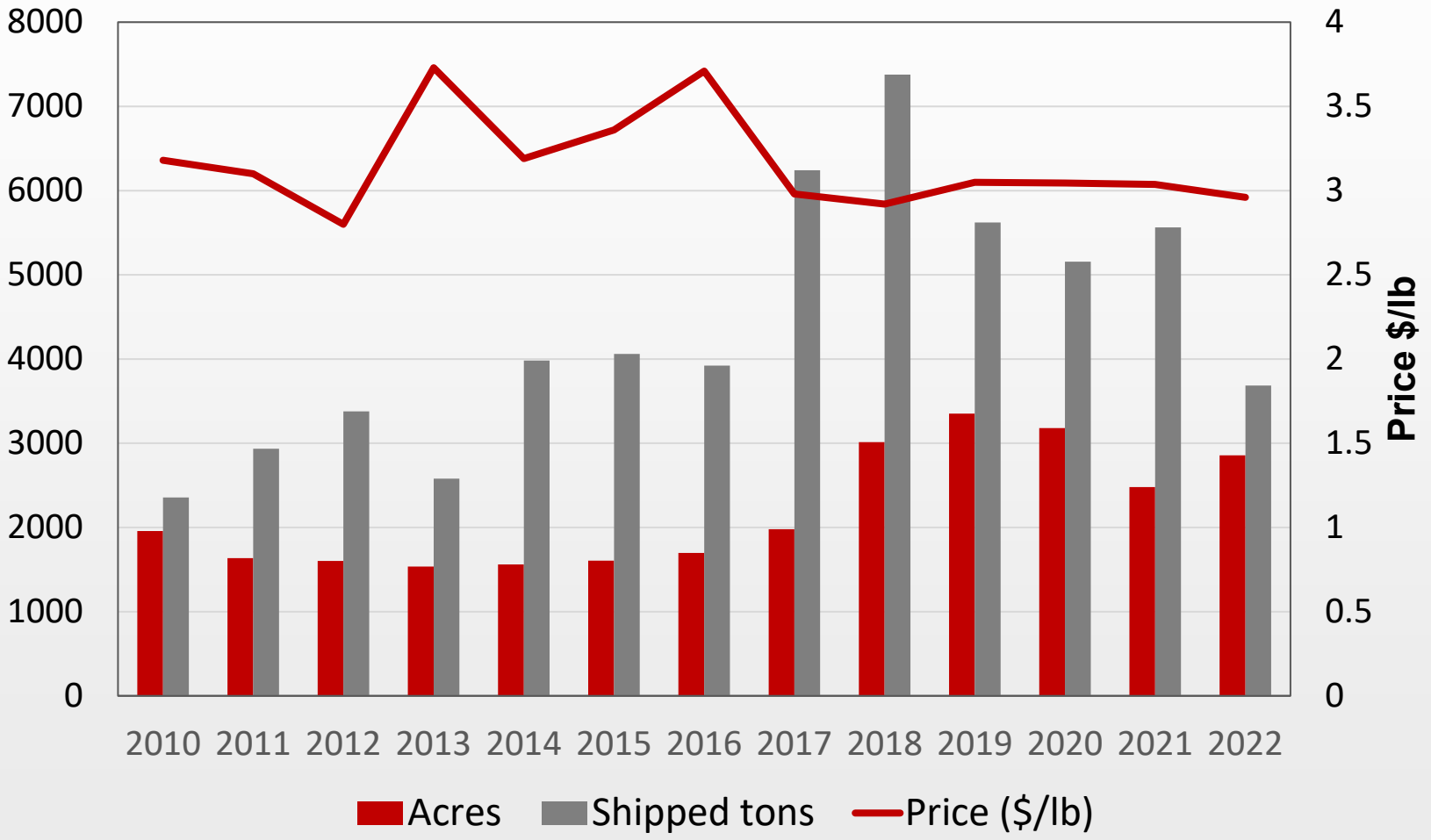
Combined certifier data;
NS = not specified

WA Organic Sweet Cherry Prices



Data: WSTFA, WGCH. Annual data points represent FOB season price averages.

WA Organic Sweet Cherries



Data: WSTFA

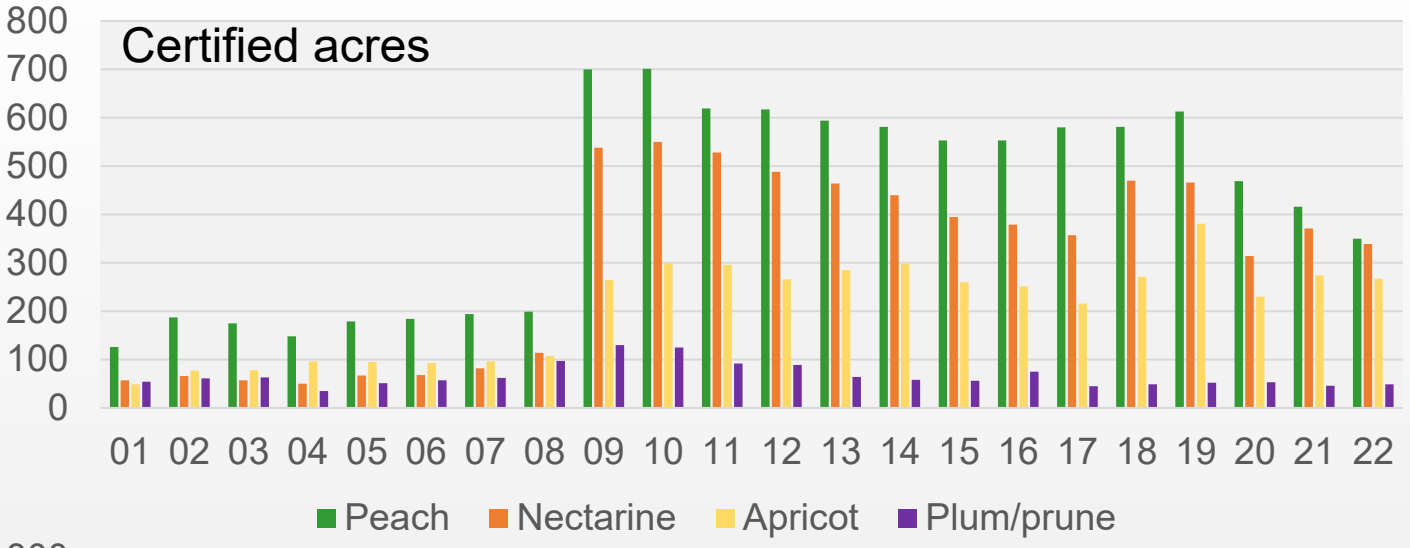
WA Organic Cherries

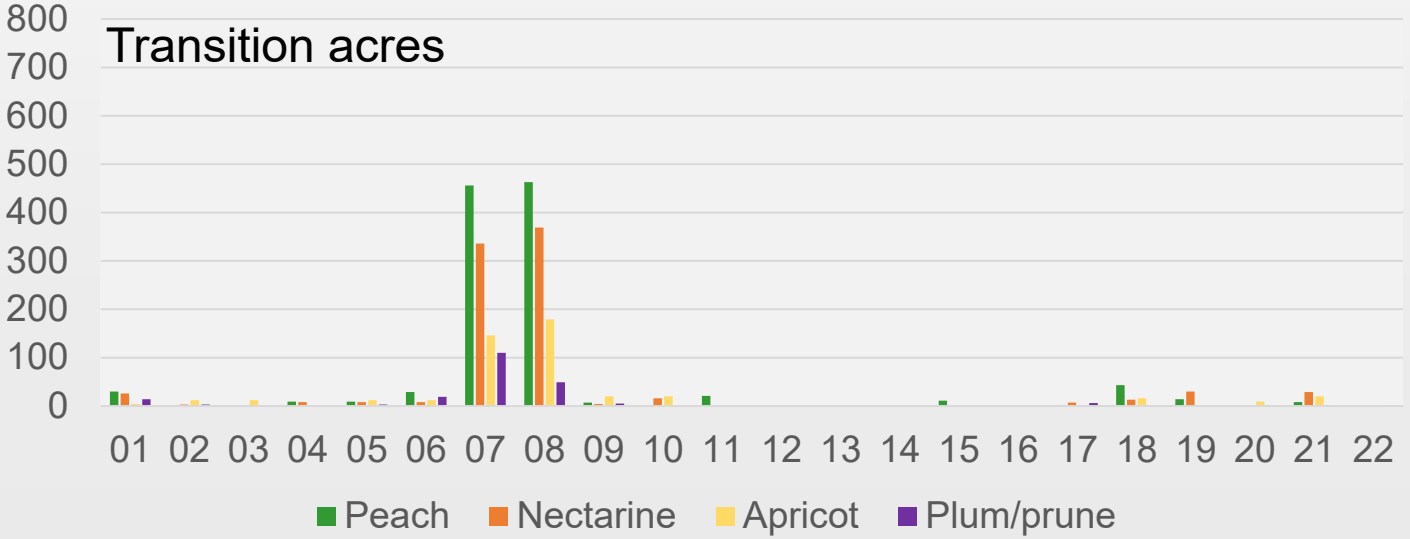
	2019		2020		2021		2022	
	ORG	CONV	ORG	CONV	ORG	CONV	ORG	CONV
Dark Sweet								
Volume (1000 box*)	511	18,739	471	16,579	512	16,935	339	11,101
% of crop	88	91	91	93	92	91	92	92
Light Sweet								
Volume (1000 box*)	68	1,970	59	1,612	59	1,586	39	951
% of crop	12	9	9	7	8	9	8	8
Organic Share of all, %	2.8		2.8		3.1		3.0	
Calculated Yield (packed tons/ac)	1.97		1.48		2.24		1.29	

*Standard Equivalent Box: Dark Sweet = 20 lb; Light Sweet = 15 lb.

Data: WSTFA

Other Stone Fruit Trends
Washington State



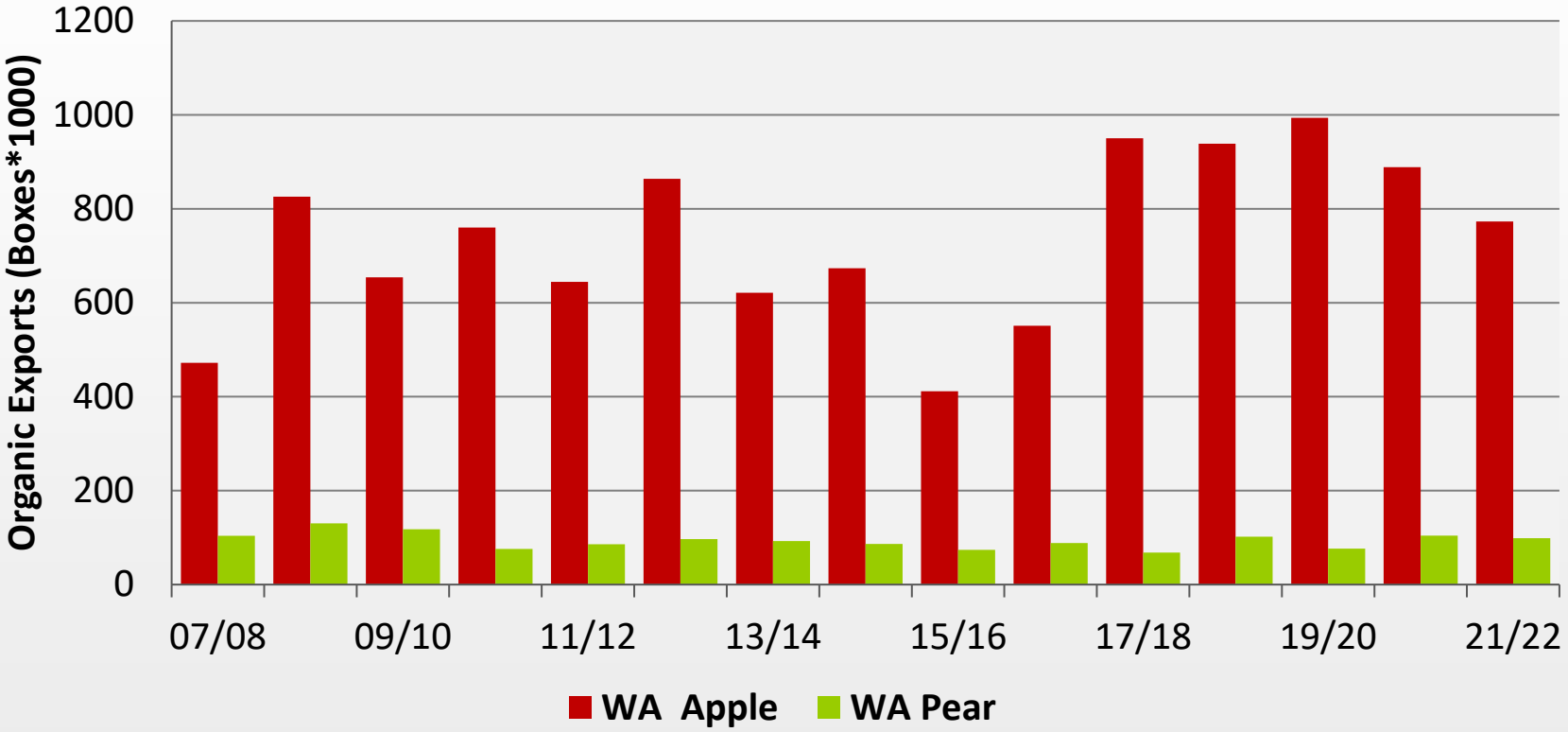


Combined certifier data

Exports

Exports of organic tree fruit from Washington have occurred for years and reached an all-time high for apples in 2019 (slide 73), which included some shipments to the UK after several years with none (slide 74). Canada is by far the largest export destination (slide 75). ‘Gala’ apple and ‘Bartlett’ pear were leading organic tree fruit exports by volume for the 2021 crop (slides 76, 77), but several other organic apple varieties have seen increased export volumes. With the much larger organic apple crop, there is more interest in exports with opportunities in Asia and the Middle East.

Organic Apple and Pear Exports
Washington State



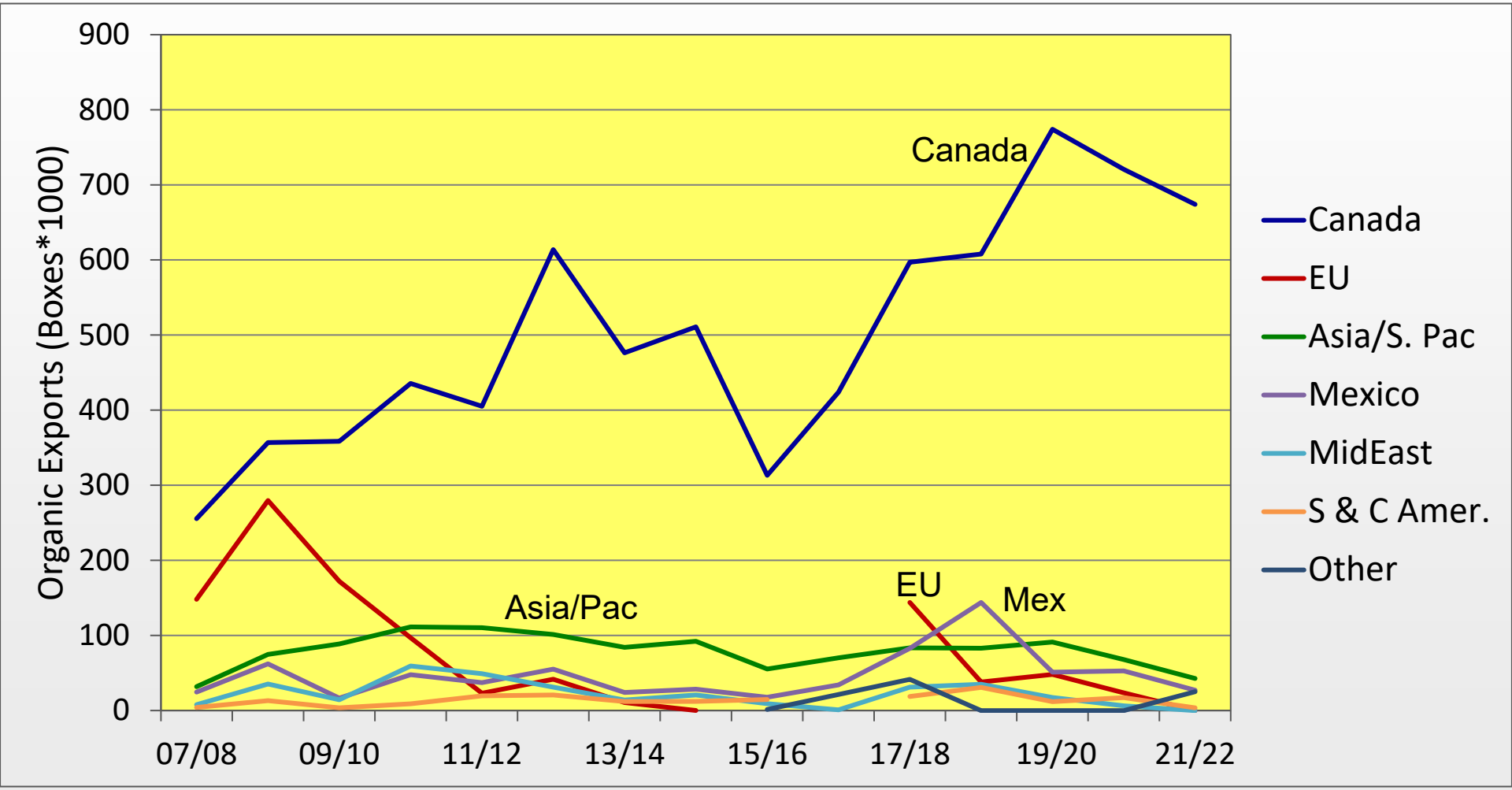
2021 exports: ~6% of the organic apple and pear volume;
Canada, largest export destination, 87% of apples and 93% of pears

Data: WSTFA, WGCH. Export includes Canada.

Exports 2019

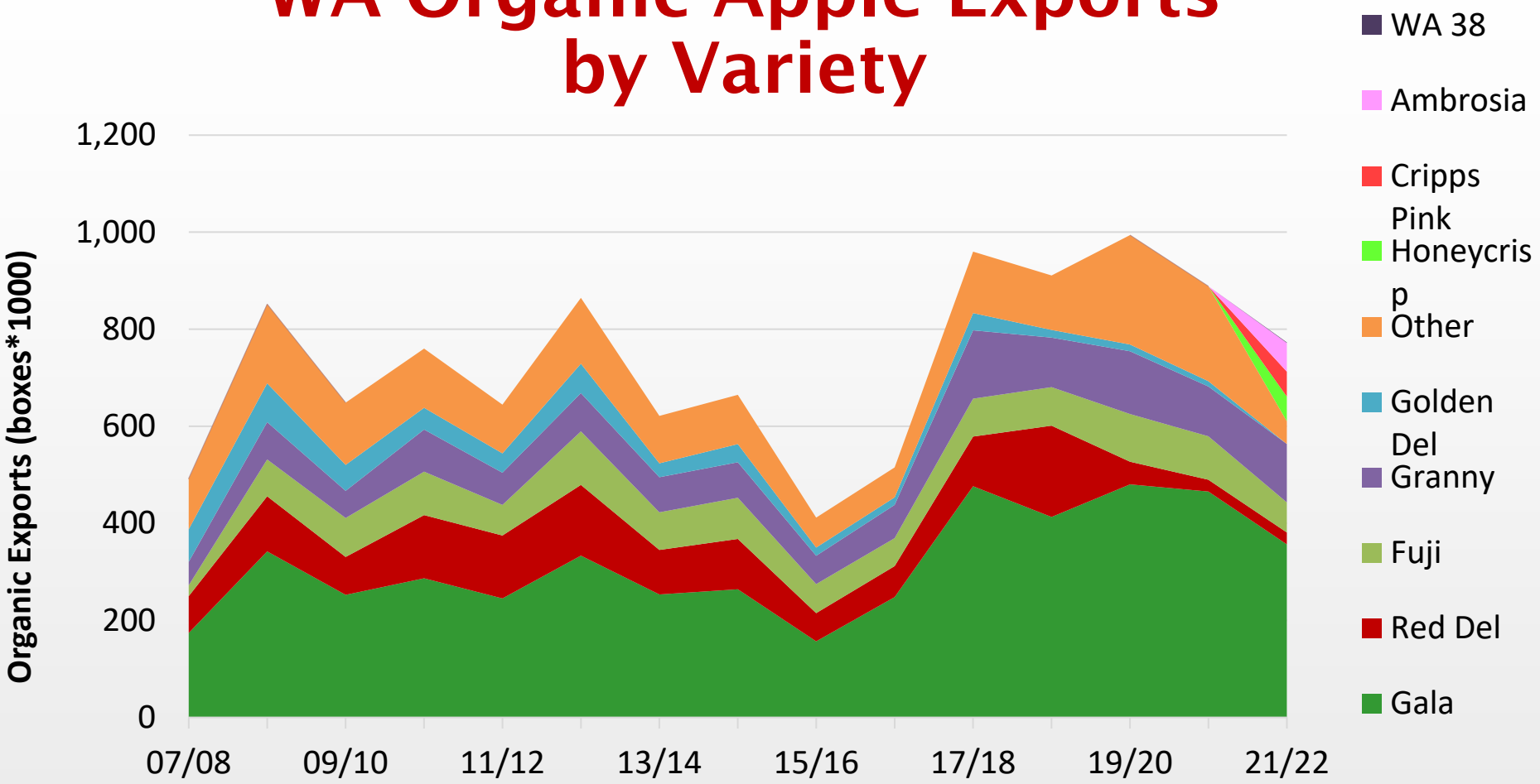
- ‘Gala’ apple and ‘Bartlett’ pear were leading export varieties
- 2017: renewed apple shipments to UK; started 1 cntr/wk, then 10-12 ctnr/wk; totaled 142,000 boxes for season, or 14% of export volume; heavy on small size, <113
- Short crop in EU for 2017 due to frost
- For comparison, in 2007, 360 ctnr to EU; in 2008 zero; in 2019, 48 ctnr (UK)
- Increasing exports of Other varieties – Ambrosia, Cripps Pink, Honeycrisp

Washington Organic Apple Top Export Destinations



Data: WSTFA, WVTA

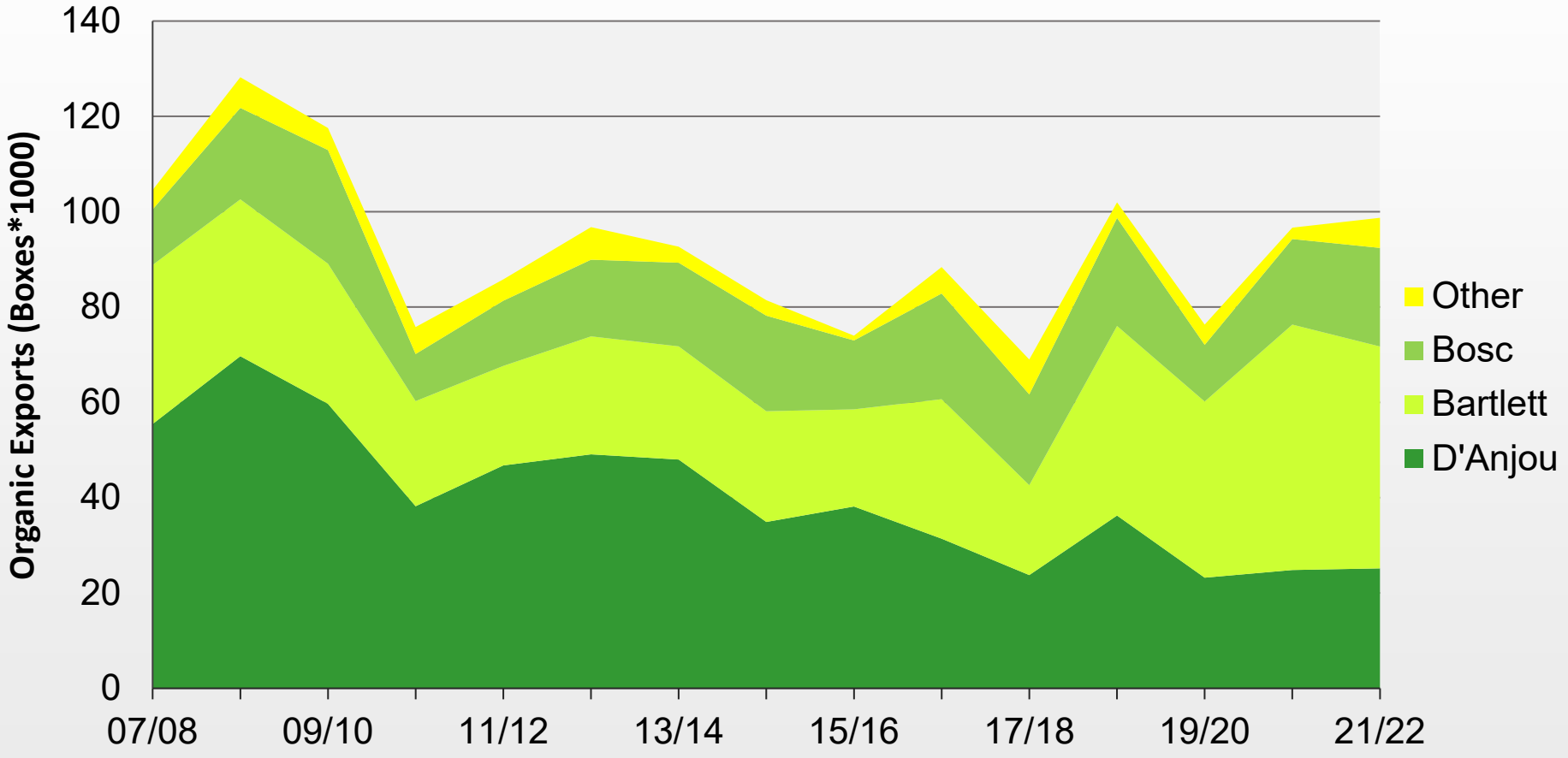
WA Organic Apple Exports by Variety



Top 2021 varieties for export: Gala 46%; Granny Smith 15%; Honeycrisp, Cripps Pink, Ambrosia each ~6%

Data: WSTFA, WVTA

WA Organic Pear Exports by Variety



2020/21 export volume: Canada 93%, Mexico 6%

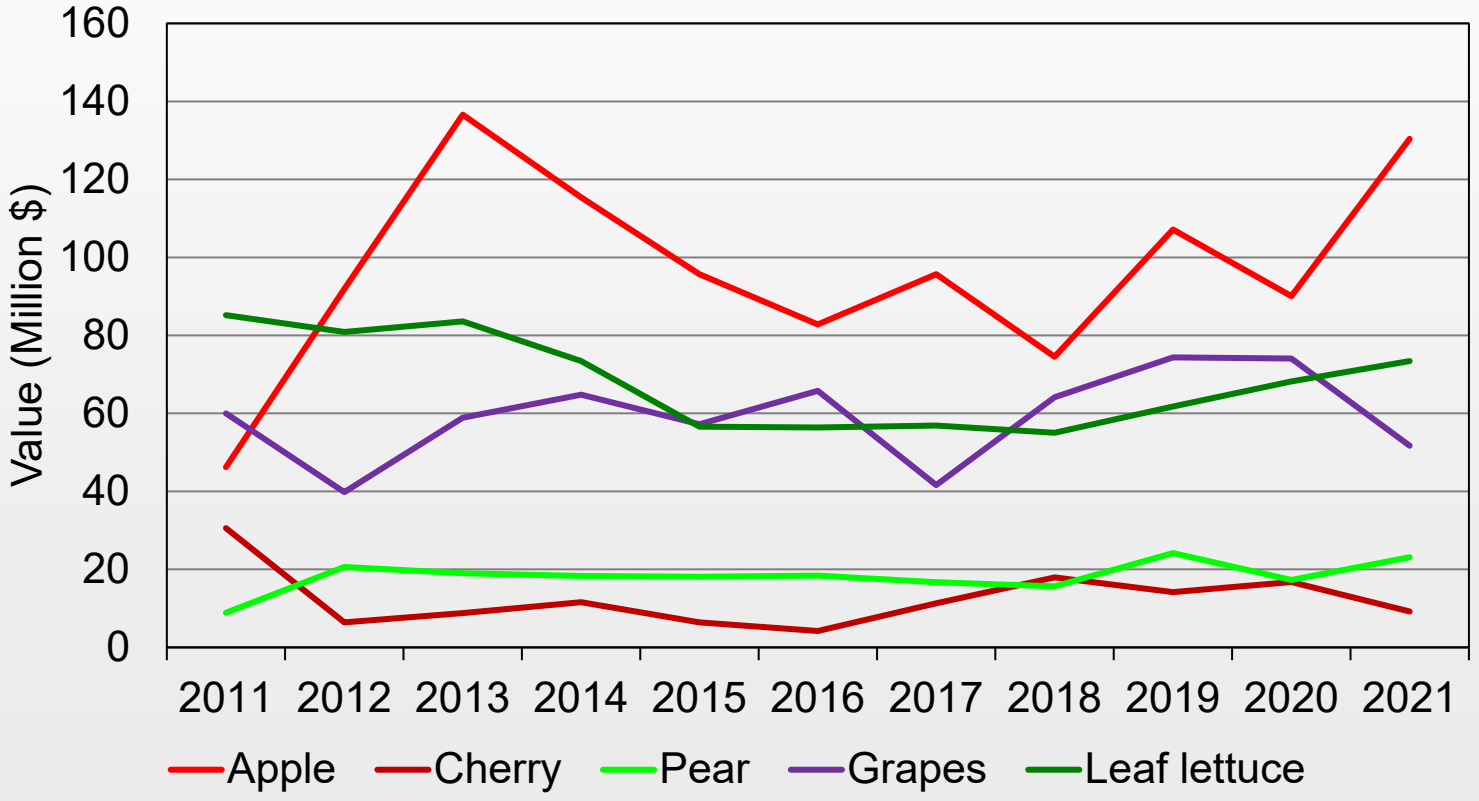
Data: WSTFA, WVTA

Exports

Apples have been the leading U.S. organic produce export by value for several years. In 2021, apples, leaf lettuce, and strawberries were the top 3 organic produce exports by value (slide 79). While the value of organic apple exports continues to exceed the value of imports, the import value has been increasing (slide 80). This parallels the overall trend for organic imports which far outpace the value of U.S. organic exports, leading to a trade deficit for organic foods. Much of the deficit is due to the import of tropical crops not grown here, but corn and soybean imports have also been substantial in the past.

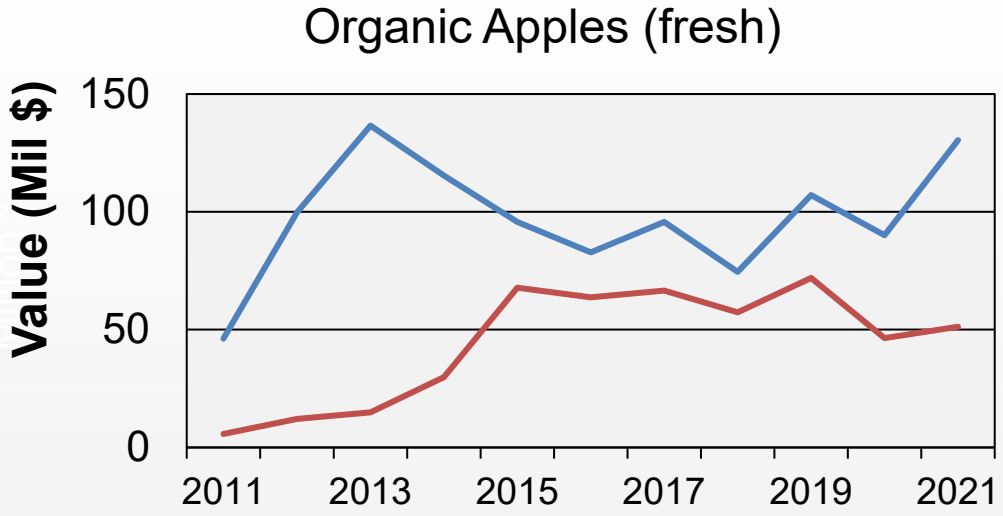
U.S. Organic Exports

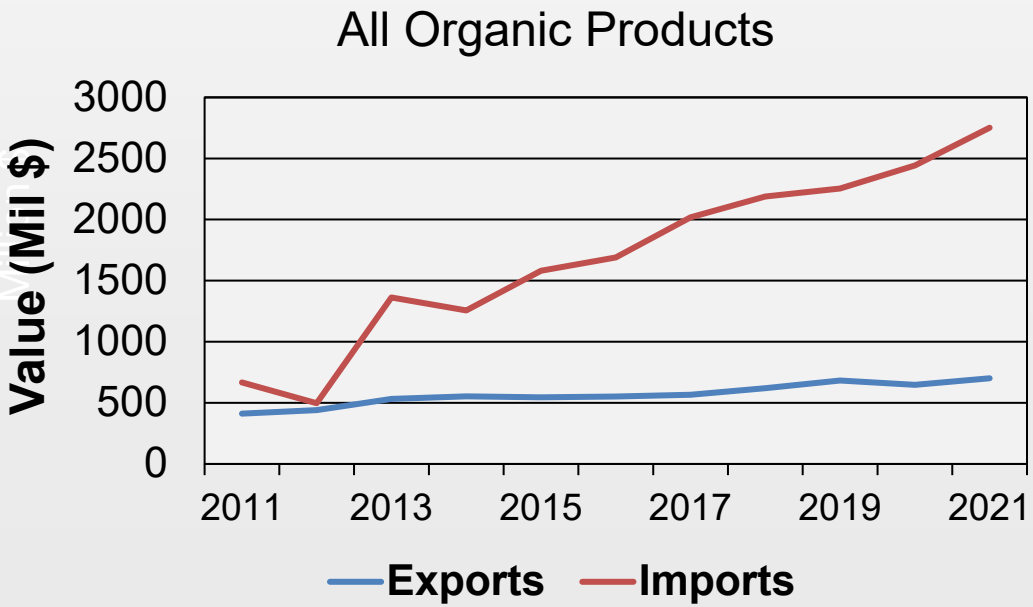
Fresh fruits are an important U.S. organic export. Apple is the leading fresh fruit product, and strawberry and blueberry are increasing.



Source: USDA-FAS GATS

U.S. Organic Trade





2021

- Apples were 18% of export $, 2% of import $
- Apples, largest export value of any organic produce (and product)
- Leaf lettuce #2, Strawberry #3, Grape #4

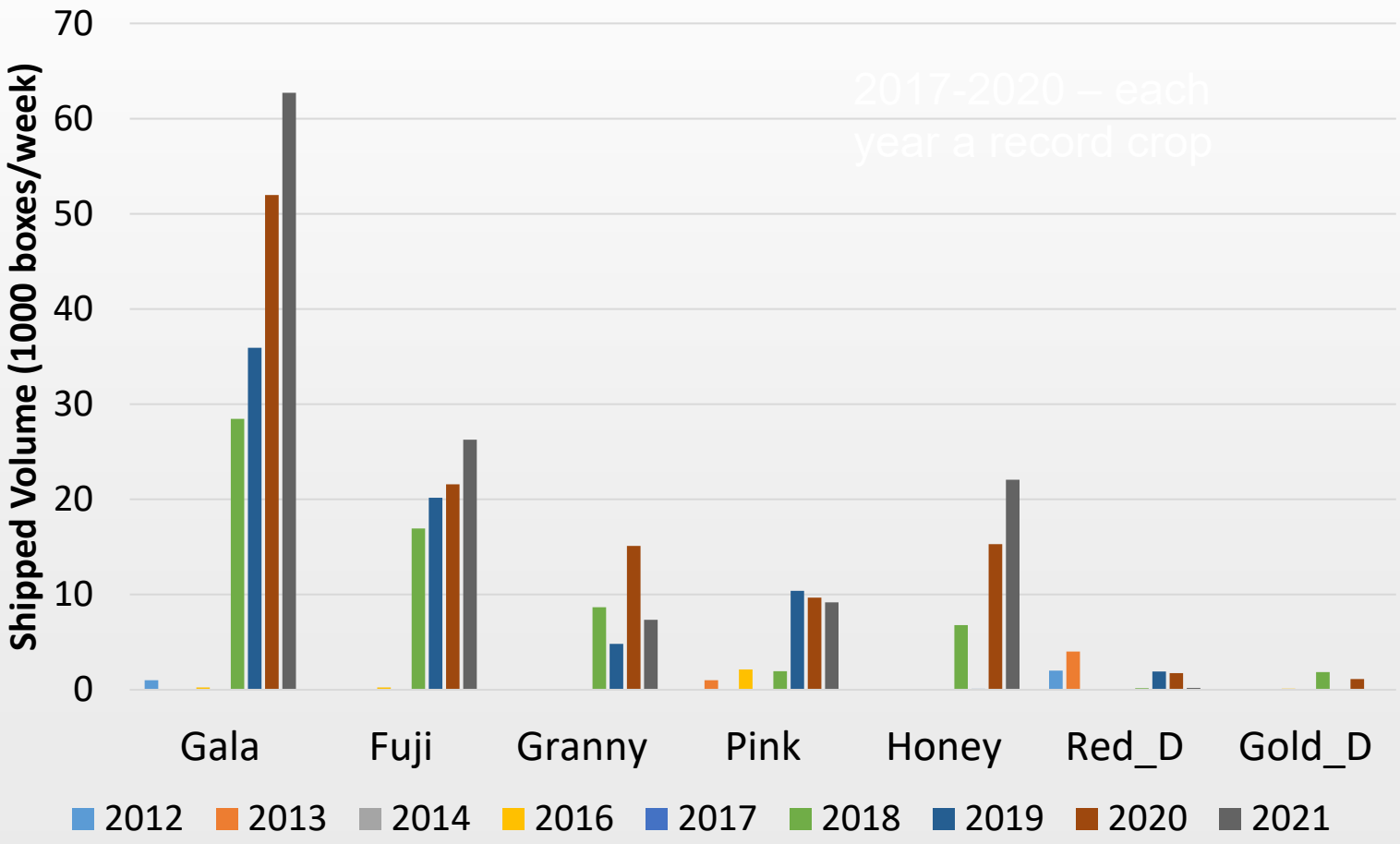
Annual Change (2021)	
Org Apple exp	+44%
Org Apple imp	+11%
All Org exp	+ 8%
All Org imp	+12%

Data: USDA-FAS

Storage

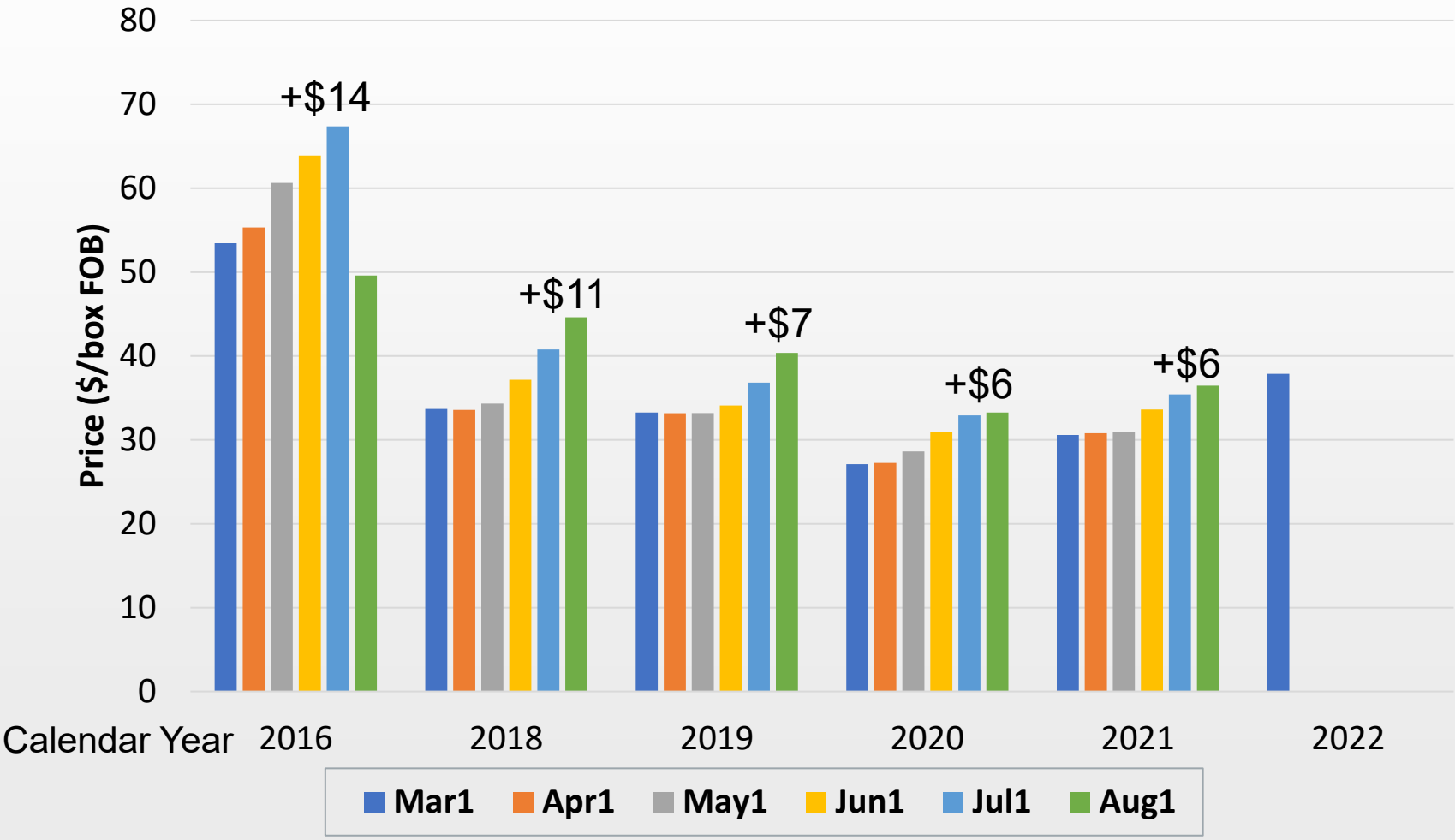
As the size of the organic apple harvest has increased, fruit companies have relied on extending the marketing season as a key strategy to selling the larger crop. This has required advances in storage technology and practice. The increase in shipped volume in mid-July from 2012-2021 for several organic apples is illustrated in slide 82. The FOB price for organic apples tends to steadily rise from March to August (slides 83 to 85). But storage losses need to be controlled in order to make this economic. In some years, there has been enough of a particular variety to ship for a full 12 months until the new crop is harvested.

Mid-July Shipped Volume of Organic Apples, WA



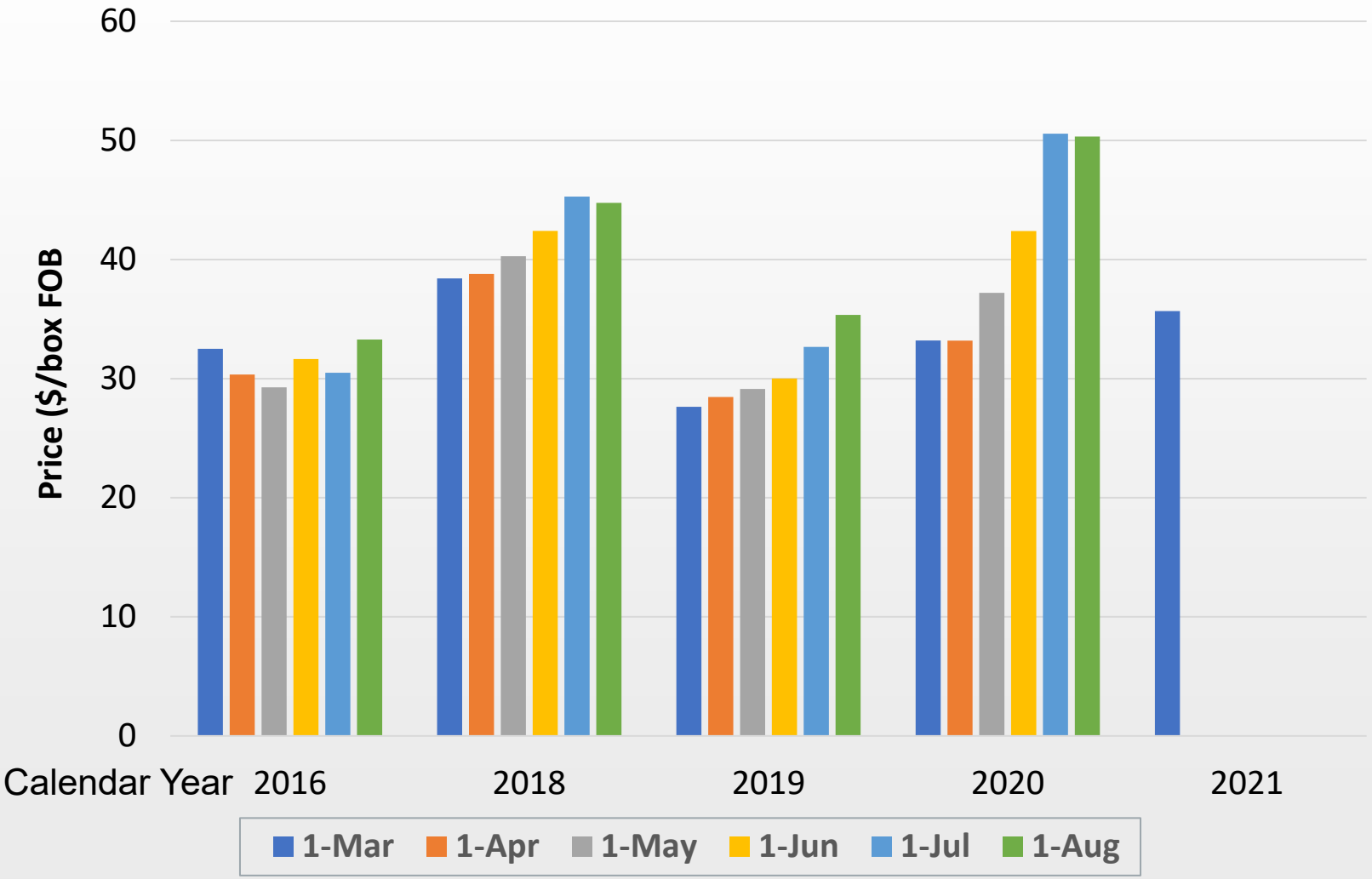
Data: WSTFA

Late Season Organic Apple Prices - Gala



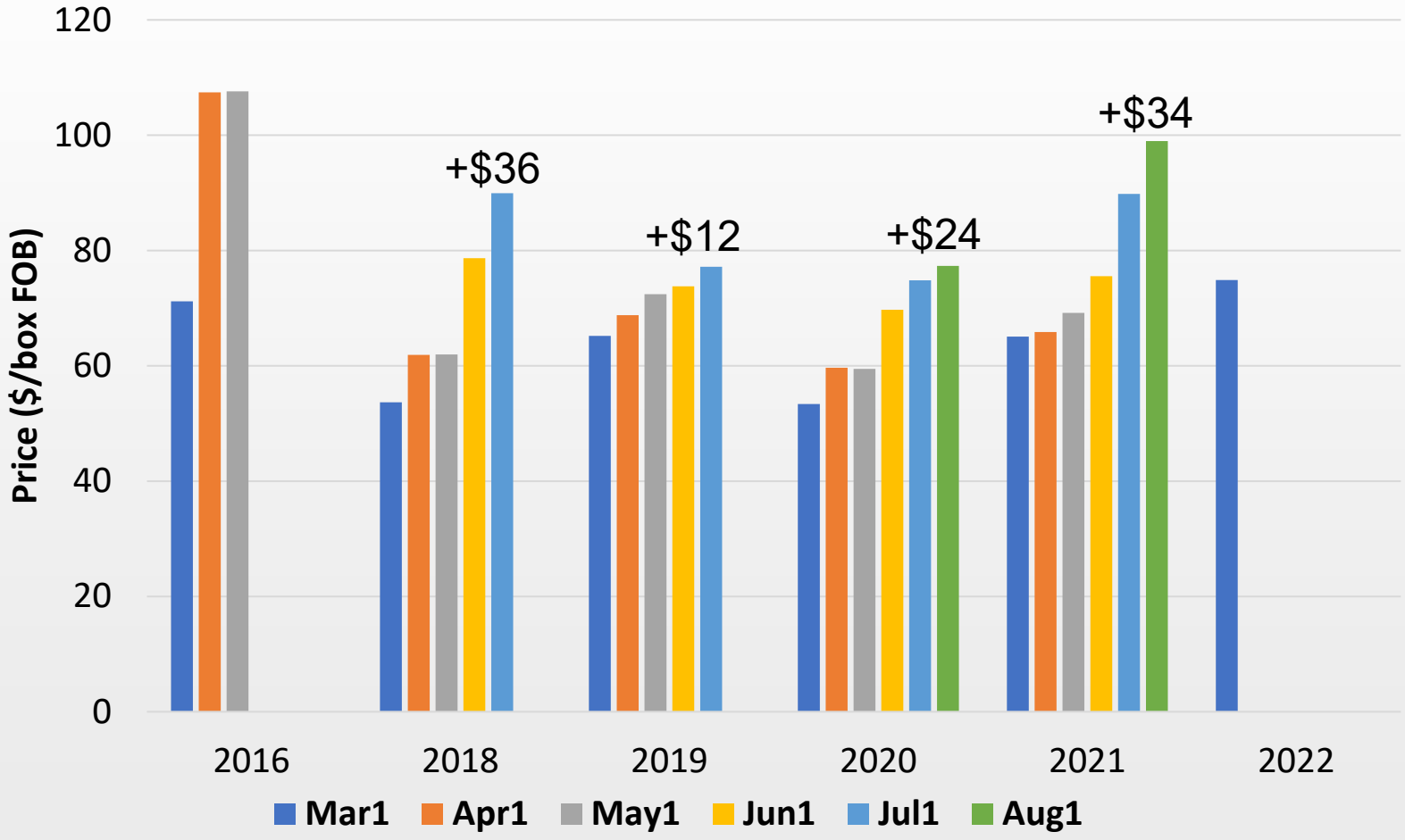
Data: WSTFA

Late Season Organic Apple Prices - Granny



Data: WSTFA

Late Season Organic Apple Prices - HoneyC



Data: WSTFA

Economics

There are a few studies of the economics of organic apple production in Washington State. In 2014, economists created enterprise budgets for both conventional and organic ‘Gala’ using the same methodology (slide 87). This allowed for a good comparison between the two systems. While organic had about 10% greater cost per bin, the net profit was 130% higher during this period of high organic prices.

No similar organic budgets have been produced since, but they are planned. However, the same economists developed budgets for 5 different apple varieties in 2019 using the same method as before. For conventional ‘Gala’, the cost per bin rose about 28% during this time while prices dropped 9%, leading to a significant loss per acre when total costs are used (slide 88). Within the ranges for price and yield modeling done, only an increase in price could lead to potential profitability. ‘Honeycrisp’ was profitable at the current price, while ‘Gala’ was unprofitable at all the prices modeled (slide 89).

Apple Economics

'Gala' apple, 2014	Organic	Conv.	%
	$/acre		
Labor	3,770	3,242	+16
Chemical/fertilizer	1,751	1,401	+25
Maintenance, repair, fuel, oil	412	382	+8
Weed control	208	Incl.	
Crop insurance	190	190	
Warehouse charges	11,529	12,490	
Total variable costs	**20,667**	**20,470**	
Fixed costs	**4,599**	**4,519**	
Total costs	**25,267**	**24,990**	
Cost per bin	$421	$384	+10
Net profit	$1,133	$490	+131
Assumes organic yield 7% less, organic price 12% more			

Data from cost of production studies by Galinato and Gallardo, 2015; WSU School of Economic Sciences

Apple Economics

'Gala' apple, conv.	2014	2019	%
Labor ($/ac)	1,690	2,273	+35
Chemical/fertilizer ($/ac)	955	3,366	+252
Maintenance, repair, fuel, oil	383	640	+67
Pre-harvest ($/ac)	3,486	7,268	+108
Harvest ($/bin)	23.50	28.11	+20
Warehouse charges ($/bin)	240	287	+20
Total variable costs ($/bin)	**394**	**506**	+28
Fixed costs ($/bin)	**87**	**153**	+76
Total costs ($/bin)	481	659	+37
Est. FOB price ($/bin)	530	481	-9
Net profit (@64 bin/ac) ($/ac)	6,048	-11,360	

Data from cost of production studies by Galinato and Gallardo, 2015, 2020. WSU School of Economic Sciences

2019 Apple Crop Budgets

	Bins/ ac	Pack %	Net $/ac	Increase Needed for Profit*	
				Price	Yield
Honeycrisp	56	75	**594**	--	--
Cripps Pink	66	78	**-7,626**	+117 (21%)	no
Fuji	68	80	**-9,493**	+$140 (28%)	no
Gala	64	80	**-11,360**	no	no
Granny Smith	68	80	**-12,497**	+$20 (5%)	76

* 'No" indicates that the highest yield at the assumed price, or the highest price at the assumed yield did not lead to profit.
Budgets by Gallardo and Galinato ses.wsu.edu/enterprise_budgets

Growers can sometimes weather several years of poor economics by just trying to cover cash costs and foregoing depreciation by keeping older machinery and facilities in service. While the conventional 'Gala' price per bin ($481) did not even cover cash costs ($516), the organic price did ($537). This is assuming that expenses and yields are similar, which may or may not be the case. But the higher organic price does illustrate that it might be profitable even in years of poor prices (slide 91).

The average annual prices for organic and conventional 'Gala' from 2008 to 2015 are shown in slide 92. Comparison budgets were done in 2009 and 2014, and the estimated breakeven price (dotted line) is compared to the FOB price (point on the graph). FOB price was higher than breakeven for both organic and conventional in 2009, but by 2014, conventional price was just lower than the breakeven, while the organic price was much, much higher than breakeven.

2019 Apple Crop Budgets

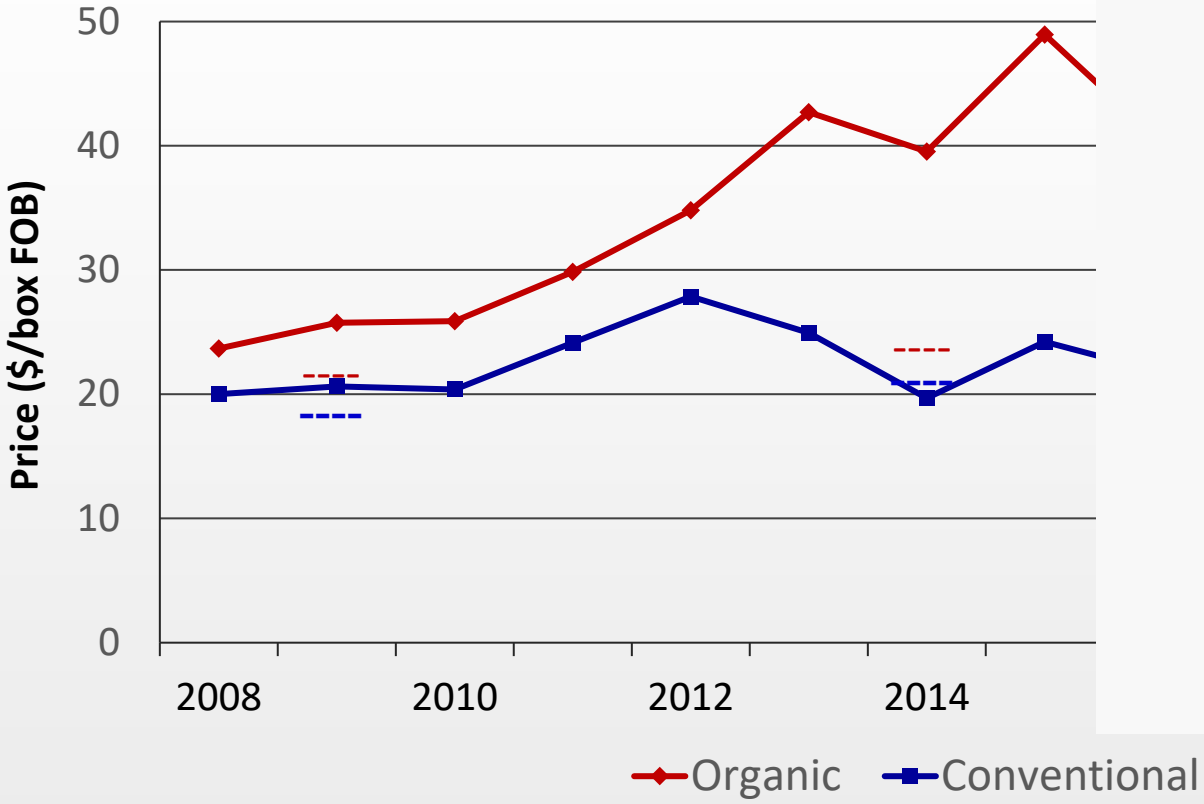
	Gala	Fuji	Granny	Cripps
Total variable costs	506	499	471	526
Total cash costs	516	509	481	538
Total cash cost + depreciation	535	528	500	556
Total cost (above + interest, management)	659	639	621	673
Assumed price CON $/bin FOB ORG	**481** **537**	**500** **569**	**437** **523**	**558** **676**

Examples:

- Gala - $481/bin FOB price does not even cover variable costs
- Fuji - $500/bin FOB price just covers variable costs, but no others
- Granny - $437/bin FOB price does not even cover variable cost
- Cripps - $558/bin FOB price almost covers cash cost + depreciation

Apple Economics

'Gala'

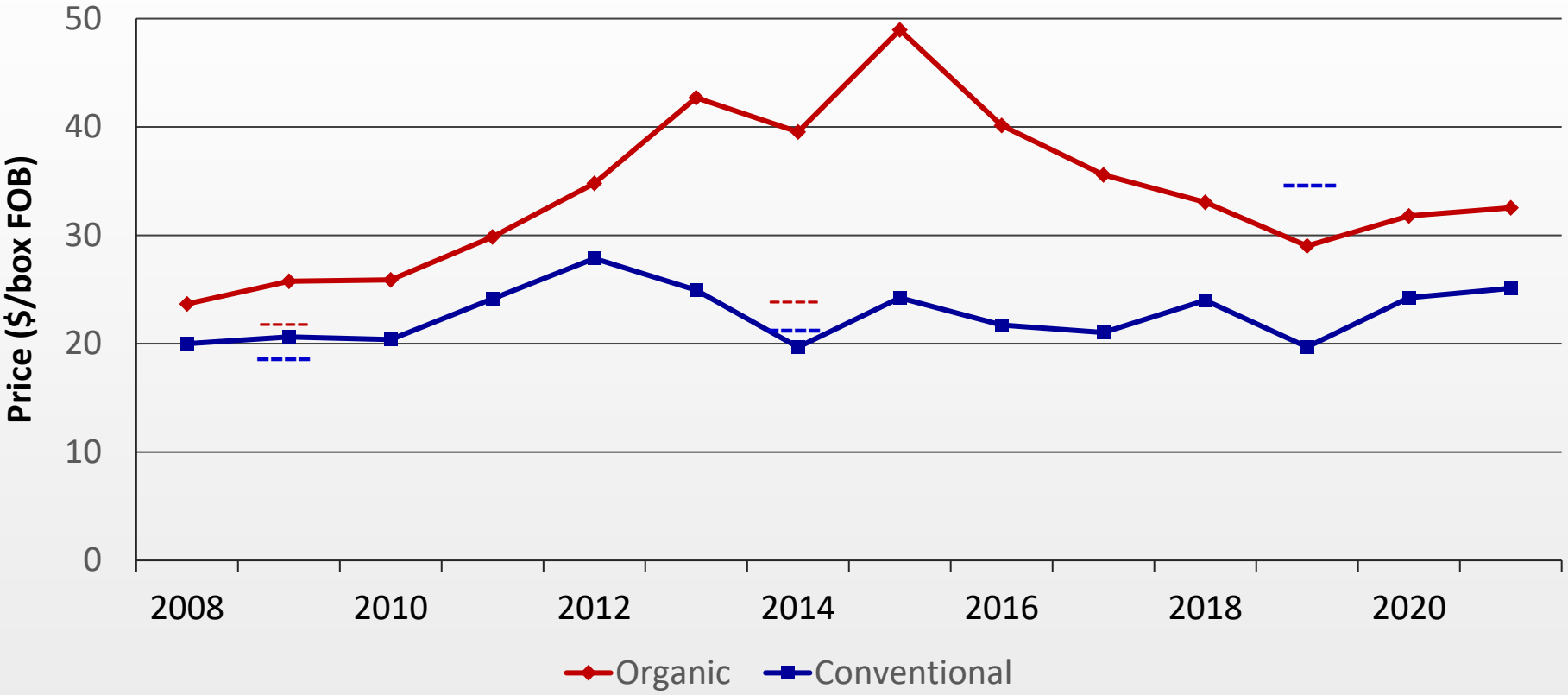


	Breakeven Price ($/box)		
	2009	2014	2019
Organic	21.00	22.76	??
Conv.	18.80	20.79	35.59

Extending the price line out to the present in slide 94, the increase of the breakeven price is evident (blue dotted lines). Production expenses have increased dramatically over 5 years while the FOB price was basically flat. The organic FOB price was substantially below the conventional cost of production, which is likely similar or lower than organic cost. Thus, it is evident that both conventional and organic growers are under serious financial pressure with escalating costs and stagnant or declining (organic) prices.

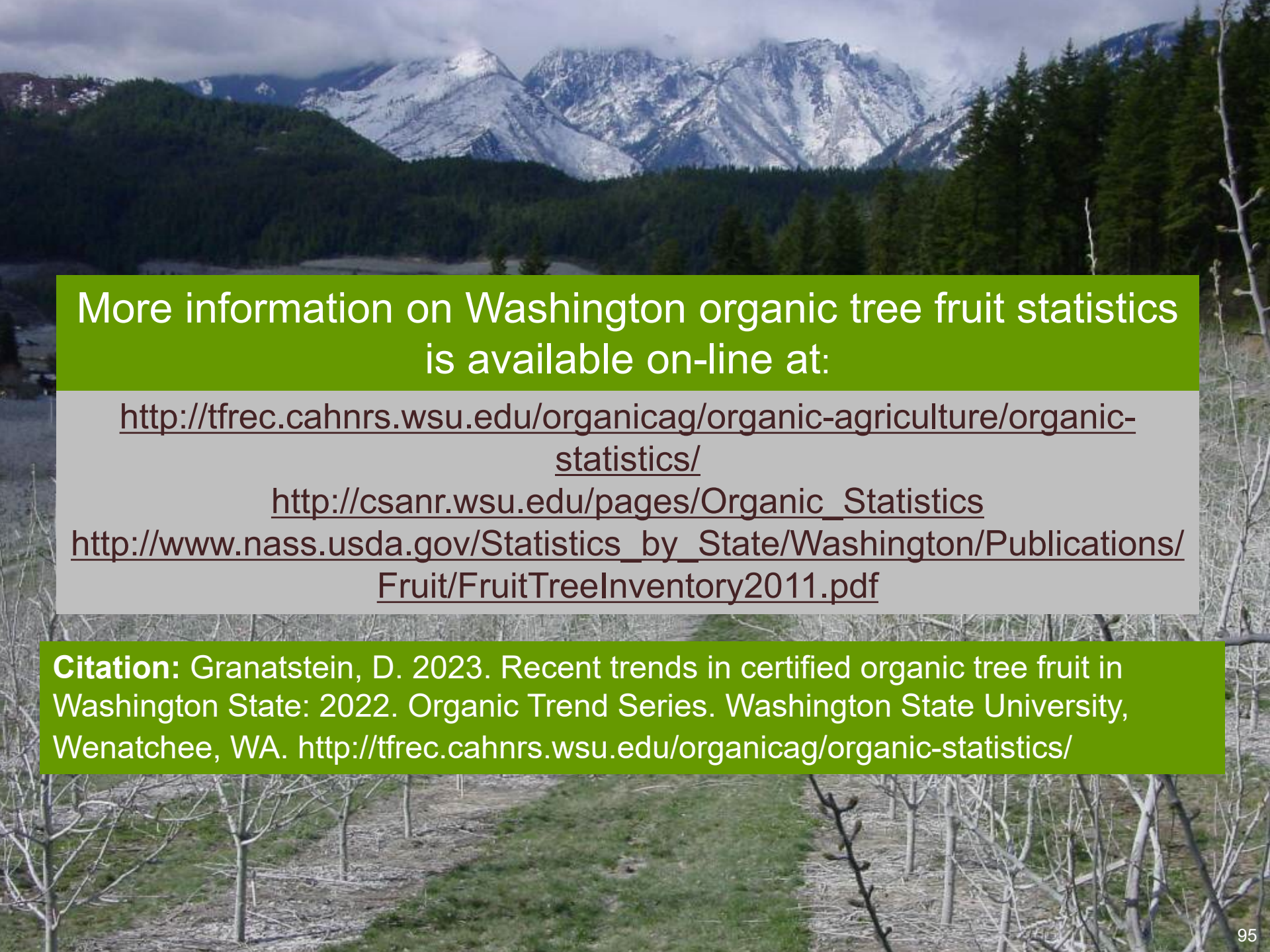
Apple Economics

'Gala'



	Breakeven Price ($/box)		
	2009	2014	2019
Organic	21.00	22.76	??
Conv.	18.80	20.79	35.59

Negative conventional return even at yield 88 bin/ac and price $540/bin



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

http://tfrec.cahnrs.wsu.edu/organicag/organic-agriculture/organic-statistics/
http://csanr.wsu.edu/pages/Organic_Statistics
http://www.nass.usda.gov/Statistics_by_State/Washington/Publications/Fruit/FruitTreeInventory2011.pdf

Citation: Granatstein, D. 2023. Recent trends in certified organic tree fruit in Washington State: 2022. Organic Trend Series. Washington State University, Wenatchee, WA. http://tfrec.cahnrs.wsu.edu/organicag/organic-statistics/