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Fruit and Tree Nuts Outlook

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Total U.S. Citrus Production Forecast Flat in 2012/13

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The next release is
March 29, 2013

Approved by the
World Agricultural
Outlook Board.

Beginning in 2012, *Fruit and Tree Nuts Outlook* will consist of four issues released in March, June, September, and December. Market analysis and data coverage for melons is now included in *Fruit and Tree Nuts Outlook* and *Fruit and Tree Nuts Yearbook*. Market analysis of melons prior to 2012 can be found in historical *Vegetable and Melon Outlook* reports.

In the National Agricultural Statistics Service (NASS) December *Crop Production* report, the revised 2012/13 citrus production forecasts were released putting total citrus production unchanged from 2011/12 to 11.75 million tons. California's all-orange crop is forecast up 1 percent from last season's final production as the increase in navel orange volume offsets the decline in Valencia production. Early-season California orange prices have dropped 2 percent below last season. Florida's Valencia crop, anticipated up 9 percent, provided the biggest gain from a year ago, but will be negated by the forecast 10-percent decline in navel orange production. With the forecast fractionally smaller Florida orange crop and lower juice yield, the Economic Research Service (ERS) projects U.S. orange juice production in 2012/13 to be down 1 percent to 949 million single-strength equivalent gallons, the lowest since 2004/05.

Total U.S. grapefruit harvest is forecast down 3 percent in 2012/13, with production losses from Florida and California. Florida's grapefruit production is down 5 percent, with declines for both colored and white varieties. Texas's crop is still below average but has made some headway after last season's weather-induced smaller crop. Quality is reported very high for Texas grapefruit, which should aid in fresh market supplies this year. The better quality and tighter supplies are felt in the higher grower prices so far this season.

California continues to increase its mandarin/tangerine production, with a projected 2012/13 harvest of 472,000 tons, up 8 percent year over year. Production in California has grown more than threefold since 2005/06. Florida tangerine production is down 11 percent from 2011/12 production levels.

Despite a larger than average crop in 2011/12, initial indications from industry sources suggest the California avocado crop will be another big one in 2012/13. Indications also point to a bumper harvest in Mexico in 2012/13, with projected increased exports to the United States. Barring any weather abnormalities, ample supplies in the United States will likely enable domestic retailers to aggressively promote avocados in 2012/13.

Price Outlook

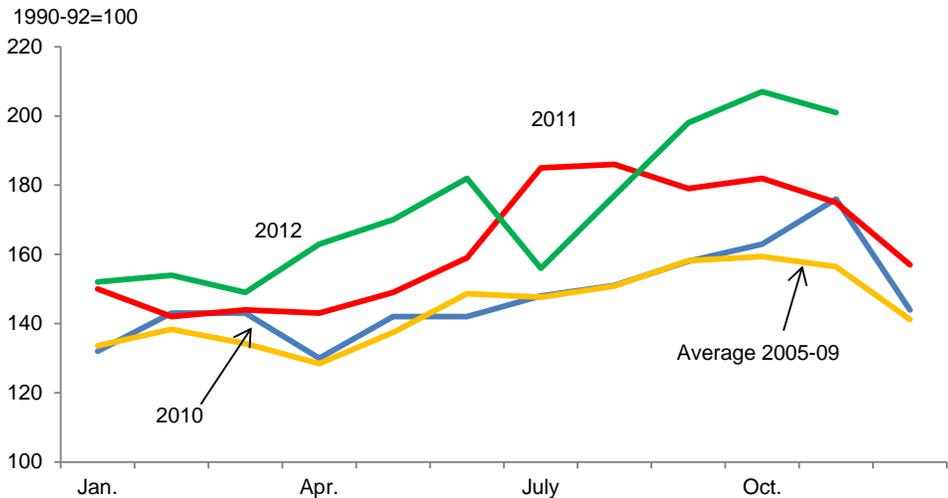
Strong Fruit and Nut Grower Prices Sustained

The November fruit and tree nut grower price index slipped 3 percent from the previous month but is up from any corresponding November index since 2005 (fig. 1). At 201 (1990-92=100), it is also the second highest for any month since 2005, after the record-high 207 reported in October 2012. The higher prices growers received in November for fresh grapefruit, apples, grapes, pears, and strawberries compared with the same period a year ago provided strength to the index (table 1).

Average fresh strawberry and grape prices showed the greatest gains in November, increasing by more than 50 percent from the same time a year ago. Reduced strawberry production in California helped boost strawberry prices over this summer and through most of the fall. California strawberry supplies are winding down by this time of year, providing additional strength to the market. Though supplies remain light, reports of an earlier harvest in Florida indicate promotable volume by mid-December. Barring any weather problems, should Florida volumes rise above a year ago, strawberry grower prices are likely to receive a downward push during the remainder of this year and into early 2013. Favorable weather has kept table grape production in California fairly unchanged from a year ago and with good quality, thus aiding grower prices, especially as robust demand in export markets is sustained thus far this season.

Despite a large harvest of apples in Washington State, strong demand for these apples in the eastern half of the country where supplies are tight, has led to an overall boost in fresh apple grower prices through November of the 2012/13 marketing season (August through July). Fresh apple grower prices in Michigan, New York, Ohio, Pennsylvania, Virginia, and Washington were all up sharply than a year ago in November, based on NASS data (fig. 2). Strong international demand

Figure 1
Index of prices received by growers for fruit and tree nuts



Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*.

Table 1--Monthly fruit prices received by growers, United States

Commodity	2011		2012		2011-12 change	
	October	November	October	November	October	November
	-----Dollars per box-----				Percent	
Citrus fruit: 1/						
Grapefruit, all	8.67	7.90	13.06	8.49	50.6	7.5
Grapefruit, fresh	10.44	10.09	16.42	12.20	57.3	20.9
Lemons, all	12.87	14.10	15.80	14.57	22.8	3.3
Lemons, fresh	19.50	18.97	19.36	17.36	-0.7	-8.5
Oranges, all	8.47	8.86	8.43	8.46	-0.5	-4.5
Oranges, fresh	11.15	13.99	12.13	14.01	8.8	0.1
	-----Dollars per pound-----					
Noncitrus fruit:						
Apples, fresh 2/	0.431	0.344	0.535	0.479	24.1	39.2
Grapes, fresh 2/	0.395	0.490	0.610	0.750	54.4	53.1
Peaches, fresh 2/	--	--	--	--	--	--
Pears, fresh 2/	0.267	0.256	0.351	0.343	31.5	34.0
Strawberries, fresh	0.669	0.844	0.901	1.330	34.7	57.6

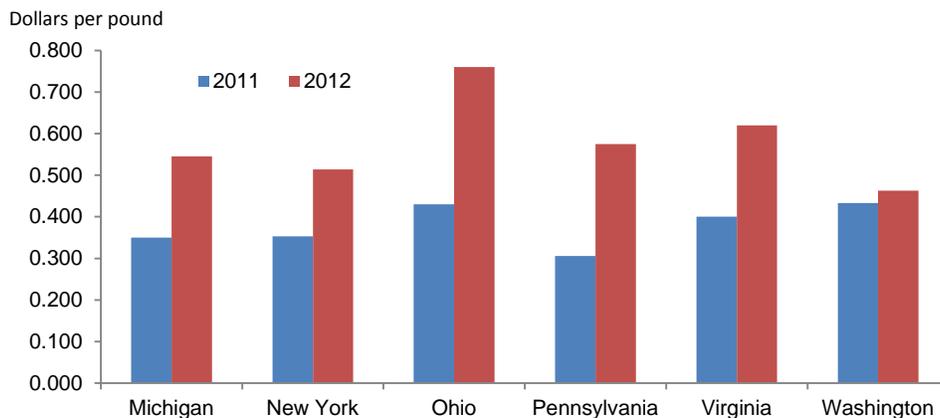
-- Insufficient number of reports to establish an estimate.

1/ Equivalent on-tree price.

2/ Equivalent packinghouse-door returns for CA, NY (apples only), OR (pears only), and WA (apples, peaches, and pears). Prices as sold for other States.

Source: USDA, National Agricultural Statistics Service, *Agricultural Prices* and *Noncitrus Fruit and Nuts 2011 Summary*.

Figure 2
October fresh apple grower prices are strong relative to a year ago



Source: USDA, National Agricultural Statistics Service, *Agricultural Prices*, November 2012.

is also aiding the market for U.S. fresh apples. November fresh apple grower prices averaged \$0.479 per pound, down from the October average of \$0.535, but 39 percent higher than the November 2011 average. At the same time, reduced domestic production, strong export demand, and lack of competing U.S. fresh apples all combine to elevate domestic fresh pear prices.

Navel orange and lemon harvest is underway. California fresh orange supplies are running 4 percent above last season through December 1, based on USDA Agricultural Marketing Service (AMS) shipment data. Season-to-date lemon shipments are also ahead. November orange grower prices declined from a year ago, mostly reflecting declines in processed orange prices. At the same time, fresh orange prices remained relatively steady averaging \$14.01 per box. Lemon

production is on a rebound in Arizona while production remains steady in California in 2012/13. Partly due to increased production, lemon prices also declined in November. Both fresh and processed grapefruit prices made strong gains due to high quality and lower shipment volumes to date relative to last season.

Retail Fresh Fruit Prices Improve

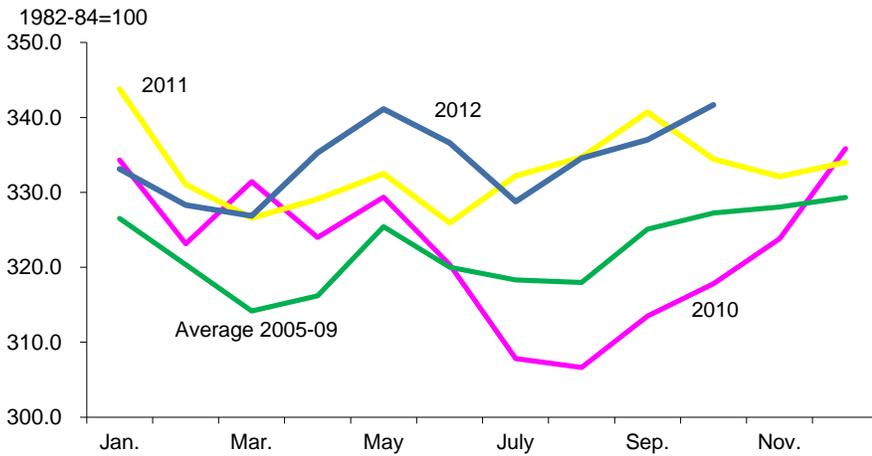
After falling below year-ago levels this summer, the U.S. consumer price index (CPI) for fresh fruit in October 2012 advanced to 341.7 (1982-1984=100), slightly improved from the previous month and 2 percent above the October 2011 CPI (fig. 3). Year-to-year price gains in grapefruits, lemons, Red Delicious apples, and Thompson Seedless grapes at the retail level led to the higher CPI. And, although October price gains for grapefruits and Thompson seedless grapes ranged from 12-13 percent from a year ago, price declines for navel oranges, bananas, and strawberries moderated the overall boost in the October CPI.

Retail prices have increased for grapefruit over the same time last year (table 2). Similar to the situation with grower prices, lower fresh production out of California and higher quality grapefruit from Texas have pushed prices up. Texas grapefruit have better appearance, due to less wind scarring and pest damage. A drier growing season has resulted in fruit that are smaller but sweet. Navel orange prices are down as the 2011/12 marketing year comes to a close. Higher fresh orange imports over the summer when domestic production was low has brought prices down. As the 2012/13 season gets under way, prices through the early spring should remain close to last-season prices with the higher production of California navels and as sizes are so far smaller than last year.

As with grower prices, retail apple prices have held strong through October. Even with greater imports, light supplies in some regional markets and higher exports strengthened apple retail prices in general. The Bureau of Labor Statistics (BLS) report the October consumer price index for apples at 340.4 (1982-84=100), up 6 percent from the same time a year ago. As the export market continues to compete with domestic availability, apple retail prices are likely to remain strong through the remainder of 2012.

Reduced shipments of California grapes in October from a year ago boosted their retail prices while increased imports through most of the first 9 months of 2012 helped put downward pressure on banana prices. As banana shipments fell below a year ago in October, price declines only amounted to less than 1 percent in October, compared with the 2-percent drop in September on higher imports. AMS shipment data show continued lower banana shipments in November through early December, likely driving up retail banana prices for the rest of the year.

Figure 3
Consumer Price Index for fresh fruit



Source: U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/data/home.htm>.

Table 2--U.S. monthly retail prices for selected fruit, 2011-12

Commodity	Unit	2011		2012		2011-12 change	
		September	October	September	October	September	October
		--- Dollars ---		--- Dollars ---		--- Percent ---	
Fresh:							
Valencia oranges	Pound	--	--	--	--	--	--
Navel oranges	Pound	1.438	1.386	1.296	1.254	-9.9	-9.5
Grapefruit	Pound	1.100	1.094	1.263	1.270	14.8	16.1
Lemons	Pound	1.682	1.598	1.615	1.604	-4.0	0.4
Red Delicious apples	Pound	1.505	1.409	1.524	1.435	1.3	1.8
Bananas	Pound	0.607	0.607	0.597	0.602	-1.6	-0.8
Peaches	Pound	1.657	--	1.683	--	1.6	--
Anjou pears	Pound	--	--	--	--	--	--
Strawberries 1/	12-oz. pint	1.983	2.060	1.936	2.015	-2.4	-2.2
Thompson seedless grapes	Pound	1.849	2.079	1.988	2.340	7.5	12.6
Processed:							
Orange juice, concentrate 2/	16-fl. oz.	2.720	2.749	2.610	2.652	-4.0	-3.5
Wine	liter	9.233	11.278	9.006	11.796	-2.5	4.6

-- Insufficient marketing to establish price.

1/ Dry pint.

2/ Data converted from 12-fl-oz containers.

Source: U.S. Department of Labor, Bureau of Labor Statistics, <http://www.bls.gov/data/home.htm>.

Fruit and Tree Nuts Outlook

U.S. Citrus Production 2012/13 Forecast Steady from Last Season

USDA's National Agricultural Statistics Service (NASS) released its revised citrus production forecast for the 2012/13 marketing year in its December *Crop Production* report. Total U.S. citrus production is forecast at 11.75 million tons in 2012/13, down 4 percent from the initial October forecast, but relatively unchanged from the final 2011/12 estimate of 11.74 million tons (table 3). The revised total reflects downward adjustments to Florida's production of oranges, grapefruit, tangerines, and tangelos. Total citrus production in Arizona, California and Texas are all anticipated above 2011/12 levels while Florida's overall crop is projected down 1 percent, reflecting declines in orange, grapefruit, tangerine, and tangelo production. The smaller and lower yielding Florida orange crop is anticipated to reduce domestic orange juice production this season. The forecasted decline in grapefruit and Valencia production in California was negated by higher supplies of navel oranges and mandarins with stable lemon production. Texas total citrus is estimated at 271,000 tons, up 8 percent from 2011/12's final citrus estimate of 252,000 tons. Arizona's citrus crop is forecast to double this year, with lemons rebounding from the 2011/12 freeze damaged crop to 68,000 tons, but not returning to 2006/07-2010/11 production average of 90,000 tons.

Table 3--Citrus: Utilized production, 2010/11, 2011/12 and forecast for 2012/13 1/

Crop and State	Utilized		Forecast for	Utilized		Forecast for
	2010/11	2011/12	2012/13 as of 12-2012	2010/11	2011/12	2012/13 as of 12-2012
	---- 1,000 boxes 2/ ----			---- 1,000 tons ----		
Oranges:						
Early/mid-season and navel:						
California	48,000	45,500	46,500	1,920	1,820	1,860
Florida 3/	70,300	74,200	67,000	3,164	3,339	3,015
Texas	1,700	1,108	1,130	72	47	48
Total 4/	120,000	120,808	114,630	5,156	5,206	4,923
Valencia:						
California	13,500	13,500	13,000	540	540	520
Florida	70,000	72,400	79,000	3,150	3,258	3,555
Texas	249	311	286	11	13	12
Total	83,749	86,211	92,286	3,701	3,811	4,087
All oranges	203,749	207,019	206,916	8,857	9,017	9,010
Grapefruit:						
California	4,100	4,400	4,000	164	176	160
Florida	19,750	18,850	18,000	840	802	766
Texas	6,300	4,800	5,280	252	192	211
All grapefruit	30,150	28,050	27,280	1,256	1,170	1,137
Tangerines and mandarins:						
Arizona	300	200	200	12	8	8
California	9,900	10,900	11,800	396	436	472
Florida	4,650	4,290	3,800	221	204	181
All tangerines and mandarins	14,850	15,390	15,800	629	648	661
Lemons:						
Arizona	2,500	750	1,700	100	30	68
California	21,000	20,500	20,500	840	820	820
All lemons	23,500	21,250	22,200	940	850	888
Tangelos						
Florida	1,150	1,150	1,100	52	52	50
All citrus	273,399	272,859	273,296	11,734	11,737	11,746

1/ The crop year begins with bloom of the first year shown and ends with completion of the harvest following year.

2/ Net pounds per box: oranges in California (CA)-80 (75 prior to the 2010-2011 crop year), Florida (FL)-90, Texas (TX)-85; grapefruit in CA-80 (67 prior to the 2010-11 crop year), FL-85, TX-80; lemons-80 (76 prior to the 2010-11 crop year); tangelos-90; tangerines and mandarins in AZ and CA-80 (75 prior to the 2010-11 crop year), FL-95.

3/ Includes Temples. 4/ Totals may not be equivalent to the sum of the categories due to rounding.

Source: USDA, National Agricultural Statistics Service, *Crop Production*, various issues.

California's Orange Crop Fractionally Larger in 2012/13

The NASS forecast has California's 2012/13 all-orange crop up less than 1 percent from last seasons' 2.36 million tons (table 4). The 2-percent increase in navel production will just offset the nearly 4-percent decline in Valencia production, to total 2.38 million tons. Valencia harvest is estimated at 520,000 tons, down from 540,000 tons and representing 22 percent of California's total orange harvest.

Despite a decline in acreage and smaller fruit size, the navel crop is larger due to a larger average fruit set per tree of 344. Estimated bearing acreage in 2012/13, at 131,000 acres, was slightly less than in 2011/12. The average fruit size is also smaller at 2.195 inches in diameter, down 3 percent as estimated in the California's *Navel Orange Objective Measurement Report* released in September.

The navel harvest began in late October, an earlier start than the previous season. The more timely harvest is evident with the 13-percent increase in shipments reported by AMS through late November, over the same period last year. Harvest volumes have picked up through November and the cooler temperatures have brought about better external color, increasing quality. Total orange imports have tapered off in November, with only Spain sending shipments in the last week of November. Overall imports are up 3 percent this season through the end of November but recent imports should not interfere with domestic orange production as major importers (Australia, Chile, and South Africa) have finished shipments for the season.

Three more Asian citrus psyllids (ACP) were found in California, at separate groves within Tulare County in November and December. This is the insect capable of spreading the huanglongbing bacteria (HLB) or citrus greening disease, which was found earlier in the year in the Hacienda Heights suburb of Los Angeles. Quarantine of citrus movement has been evoked in Hacienda Heights and 163-square mile quarantine in Tulare, which is the top citrus-producing county in California. It is unknown if any of the ACP carried HLB and there is no sign of infected trees, but as HLB has no known cure, it is considered a major threat which requires aggressive preventative action.

Table 4--Oranges: Utilized production, 2009/10-2011/12 and forecast for 2012/13 1/

Crop and State	Utilized			Forecast	Utilized			Forecast
	2009/10	2010/11	2011/12	2012/13 as of 12-2012	2009/10	2010/11	2011/12	2012/13 as of 12-2012
	-- 1,000 boxes 2/--				-- 1,000 short tons--			
Oranges:								
Early/mid-season and navel 3/:								
Arizona	--	--	--	--	--	--	--	--
California	42,500	48,000	45,500	46,500	1,594	1,920	1,820	1,860
Florida	68,600	70,300	74,200	67,000	3,087	3,164	3,339	3,015
Texas	1,360	1,700	1,108	1,130	58	72	47	48
Total	112,460	120,000	120,808	114,630	4,739	5,156	5,206	4,923
Valencia:								
Arizona	--	--	--	--	--	--	--	--
California	15,000	14,500	13,500	13,000	562	540	540	520
Florida	65,100	70,200	72,400	79,000	2,930	3,150	3,258	3,555
Texas	275	249	311	286	12	11	13	12
Total	80,375	84,949	86,211	92,286	3,504	3,701	3,811	4,087
All oranges	192,835	204,949	207,019	206,916	8,243	8,857	9,017	9,010

-- = Data not available.

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pounds per box: Arizona and California--75 prior to 2010/11, 80 thereafter, Florida--90, and Texas--85.

3/ Navel and miscellaneous varieties in California and Arizona, and early- and mid-season (including navel) varieties in Florida and Texas. A small quantity of tangerines is also included in Texas' data.

Source: USDA, National Agricultural Statistics Service, *Crop Production Report*.

Slight Increase in California Orange Production Should Keep Prices Stable

The 2-percent increase in production of California navel oranges and the smaller sizes reported by NASS suggest a leveling off to slightly lower grower prices in 2012/13. Prior to the start of the 2012/13 navel season, California Valencia prices were receiving higher prices due to tight end-of-season supplies. When the navel season started in November, California grower prices started to dip below last season's price by 2 percent. These lower prices are also being felt at the retail level, with AMS data showing advertised retail prices in November for navel oranges down 6 percent per fruit from a year ago.

Florida Orange Harvest Fractionally Smaller in 2012/13

The 2012/13 Florida all-orange crop is down less than 1 percent from last season to 6.57 million tons. Production of early, midseason and navel varieties is forecast down 10 percent to 3.02 million tons, from 3.34 million tons last season, while the Valencia crop is forecast 9 percent larger to total 3.56 million tons. The citrus growing region is just beginning to experience some drought with ongoing harvest of navels, early, midseason, and temples through early December. The Florida NASS Field Office reported that some trees are struggling to maintain healthy, growing fruit sets this season which explains the decline in forecast production. The Florida Citrus Administrative Committee (FCAC) reports that less than 45 percent of navels have been harvested and only 4 percent of early, midseason, and temples have been harvested through November. Both are slightly behind last season's harvest rate over the same period. Navel oranges are running smaller than the previous season with 10 percent sizing 125's, compared to only 3 percent last season, and 7 percent sizing 163's or greater compared to just 1 percent last year. The non-Valencia crop is also smaller with 48 percent sizing 163 or more per bushel, compared to just 20 percent in 2011/12. The Florida Department of Citrus (FDOC) in the annual *Florida Citrus Outlook 2012-13 Season* report, estimates that prices will decline this year for non-Valencia and Valencia oranges, due to smaller fruit sizes. FDOC projects average processed on-tree prices at \$6.04 per box for early and midseason varieties and \$6.93 per box for Valencias, compared to \$6.90 and \$8.80, respectively in 2011/12.

U.S. Orange Juice Production Forecast to Decline

ERS forecast U.S. orange juice production in 2012/13 at 949 million single-strength equivalent (sse) gallons, down 1 percent from last season (table 5). This decline is attributed to the forecast reduced crop in Florida and the projected 1 percent decline in juice yield to 1.61 gallons per box. Imports are forecast to increase slightly to 225 million sse gallons but growth will be limited by a decline in Brazilian orange juice production this year. In 2011/12, orange juice stocks rose 11 percent higher than the previous season to end at 449 million sse gallons. With the higher beginning stocks in 2012/13, total supplies are projected 2 percent larger at 1.62 billion sse gallons. Exports are projected to rise only slightly (up 2 percent) to 155 million sse gallons, as the slightly larger U.S. orange juice supply is used to meet domestic demand and maintain stock levels. Nielsen retail sales data from the FDOC shows a 3-percent decline in sales through the first month of the marketing

Table 5--United States: Orange juice supply and utilization, 1990/91 to date

Season 1/	Beginning		Imports	Supply	Exports	Domestic consumption	Ending stocks 2/	Per capita consumption
	stocks	Production						
-----Million sse gallons 3/-----								Gallons
1990/91	225	876	320	1,422	94	1,170	158	4.6
1991/92	158	930	286	1,374	107	1,096	170	4.3
1992/93	170	1,207	324	1,701	114	1,337	249	5.2
1993/94	249	1,133	405	1,787	107	1,320	360	5.0
1994/95	360	1,257	198	1,815	117	1,264	434	4.8
1995/96	434	1,271	261	1,967	119	1,431	417	5.3
1996/97	417	1,437	256	2,110	148	1,398	564	5.2
1997/98	564	1,555	281	2,400	150	1,571	679	5.7
1998/99	679	1,236	350	2,265	147	1,585	534	5.7
1999/00	534	1,493	339	2,366	146	1,575	645	5.6
2000/01	645	1,387	258	2,291	123	1,470	698	5.2
2001/02	698	1,433	189	2,321	181	1,447	692	5.0
2002/03	692	1,250	291	2,233	103	1,426	705	4.9
2003/04	705	1,467	222	2,393	123	1,448	822	5.0
2004/05	822	974	358	2,153	119	1,411	623	4.8
2005/06	623	986	299	1,909	138	1,312	459	4.4
2006/07	459	889	399	1,747	123	1,248	376	4.2
2007/08	376	1,156	406	1,938	136	1,155	647	3.8
2008/09	647	1,060	317	2,025	125	1,206	694	3.9
2009/10	694	840	328	1,862	147	1,158	558	3.7
2010/11	558	919	265	1,742	210	1,128	404	3.6
2011/12	404	959	223	1,586	152	985	449	3.1
2012/13 f/	449	949	225	1,622	155	1,017	450	3.2

f = forecast.

1/ Season begins in December of the first year shown. As of 1998/99, season begins the first week of October.

2/ Data may not add due to rounding. Beginning with 1994/95, stock data include chilled as well as canned and frozen concentrate juice. 3/ SSE = single-strength equivalent.

Source: USDA, Economic Research Service.

season, compared to the same period last year. However, with the anticipated increased supply and little growth in exports, domestic consumption is projected at 1.02 billion gallons, up 3 percent from 2011/12's low.

Brazilian Orange Juice Production Buffered by Higher Inventories

According to USDA Foreign Agricultural Service (FAS) *Production, Supply and Distribution* database, the combined U.S. and Brazilian orange juice production accounts for 88 percent of total global supplies. Brazil accounts for 57 percent of global production and exports 80 percent of the world's orange juice. The United States produces a third of the world's orange juice but only accounts for 7 percent of total exports.

Brazil's orange juice production is expected to decline 15 percent to 1.8 billion sse gallons in 2012/13, according to FAS (table 6). The decline in production is buffered by the large beginning stocks, bringing total supply less than 1 percent above 2011/12's levels. Beginning stocks in 2011/12 were nearly depleted but higher production and lower exports allowed for inventories to be rebuilt by the end of the season. The drop in 2012/13 production in the Sao Paulo and Minas Gerais areas is most likely due to the off-year cycle for some orange varieties. With the decline in production, the FDOC forecast a 3-percent increase in juice yields to 1.38 per box from Sao Paulo citrus. Exports are expected to be 2 percent stronger this season as Brazil can pull from higher stocks. However, FDOC projects a decrease

Table 6--Brazilian orange juice production and utilization, 1991 to date.

Season 1/	Beginning stocks	Production	Domestic consumption	Exports	Ending stocks 2/
--Million sse gallons 3/--					
1991	177	1,334	25	1,390	96
1992	96	1,610	25	1,532	148
1993	148	1,572	25	1,546	148
1994	148	1,583	31	1,482	218
1995	218	1,525	25	1,476	242
1996	242	1,620	24	1,660	177
1997	177	1,954	22	1,778	331
1998	331	1,712	26	1,600	418
1999	418	1,912	22	1,821	486
2000	486	1,683	21	1,778	370
2001	370	1,375	21	1,511	212
2002	212	1,904	21	1,757	337
2003	337	1,618	25	1,852	79
2004	79	2,084	28	1,992	142
2005	142	1,807	32	1,891	25
2006	25	2,024	39	1,989	21
2007	21	2,061	43	1,808	231
2008	231	1,831	47	1,776	240
2009	240	1,773	47	1,787	178
2010	178	1,525	49	1,634	21
2011	21	2,054	56	1,685	334
2012	334	1,755	58	1,713	318

f = forecast. 1/ Season begins in July. 2/ Data may not add due to rounding.

3/ sse = single-strength equivalent. To convert to metric tons at 65 degrees brix, divide by 1.40588. Beginning in 2007, divide by 1.3926.

Source: USDA, Foreign Agricultural Service *Brazil Citrus Semi Annual* reports.

in Brazil's shipments to North American Free Trade Agreement (NAFTA) countries. This projection has weighed in ERS's forecasted change in imports for 2012/13.

U.S. Grapefruit Production Forecast To Decrease in 2012/13

The U.S. grapefruit crop is forecast at 1.14 million tons, down 3 percent from last season's total of 1.17 million tons (table 7). Florida is projected to reduce production by 5 percent to 766,000 tons, accounting for 70 percent of all grapefruit production. Texas is expected to rebound back from 2011/12's drought reduced harvest of 192,000 tons increasing 10 percent to 211,000 tons. California is forecast to reduce production by 9 percent this season to 160,000 tons. Overall, Texas and California account for 17 percent and 13 percent of total production, respectively.

Florida's grapefruit crop is down this season due to a decline in acreage (down 2 percent from 2011/12) and smaller fruit size. Fruit sizes are expected smaller (more grapefruit falling in the 63's or more per bushel size range) this season due to a larger fruit set. Colored grapefruit production is down 4 percent this year and white grapefruit down 7 percent. Combined, this could be the smallest grapefruit harvest since 2004/05. Harvest is ongoing since it started in mid-September, a little later start than last season and shipments through late November are down 1 percent,

Table 7--Grapefruit: Utilized production, 2009/10-2011/12 and forecasted 2012/13 1/

Crop and State	Utilized			Forecast for	Utilized			Forecast for
	2009/10	2010/11	2011/12	2012/13 as of 10-2012	2009/10	2010/11	2011/12	2012/13 as of 10-2012
	--1,000 boxes 2/--				--1,000 short tons--			
Florida, all	20,300	19,750	18,850	18,000	863	840	802	766
Colored	14,300	13,900	13,500	13,000	608	591	574	553
White	6,000	5,850	5,350	5,000	255	249	228	213
Arizona	3/	3/	3/	3/	3/	3/	3/	3/
California	4,500	4,310	4,400	4,000	151	172	176	160
Texas	5,600	6,300	4,800	5,280	224	252	192	211
Total	30,400	30,360	28,050	27,280	1,238	1,264	1,170	1,137

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pounds per box: California and Arizona-67 prior to 2010/11, 80 thereafter, Florida-85, and Texas-80.

3/ Estimates discontinued beginning with the 2009/10 crop year.

Source: USDA, National Agricultural Statistics Service, *Crop Production Report*.

according to AMS. Harvest so far is lagging behind last season, with 89 percent of all grapefruits still left to be harvested, compared to 84 percent in 2011/12. White grapefruit exports are above last season by 9 percent while colored grapefruit exports are down 15 percent through late November. Domestic shipments (including Canada) are showing the opposite, with white grapefruit shipments lagging and colored grapefruit shipments up 19 percent.

With supplies of grapefruit slightly behind last year, the FCAC reports free-on-board (f.o.b.) prices for both white and red seedless grapefruit up from last year. Through November 25, prices are averaging \$15.36 per 4/5 bushel box for white seedless grapefruit, compared to \$12.57 per 4/5 bushel last season. Even red seedless is experiencing stronger prices this season with an average through late November of \$13.72 per 4/5 bushel, 21 percent above f.o.b. prices for the same period last year. Prices should remain above last season due to tighter supplies across all grapefruit markets.

Grapefruit production in Texas has gained ground with production at 211,000 tons, a 10-percent increase from last season's drought stricken crop. Although crop size has improved, the harvest remains 6 percent below the previous 5-year average. The expected larger crop is evident in the increased shipping volumes through late November, up 7 percent, according to AMS. Overall quality is excellent, with less cosmetic deficiencies, but sizes are smaller due to the dry conditions during crop development. Recent rains have aided in increasing fruit size, so late-season fruit should size up better than fruit harvested earlier this season.

Grapefruit Juice Supply Expected To Strengthen in 2012/13

Total U.S. production of grapefruit juice in 2012/13 is forecast almost unchanged from last season to 76.4 million sse gallons. More grapefruit is projected to be destined for the processing sector this season due to the smaller fruit size in Florida and increased production in Texas (table 8). An anticipated 60 percent of Florida grapefruits and 44 percent of Texas fruits will enter the processing market, a slight increase for both markets compared with the previous season.

Table 8--U.S. grapefruit juice: Supply and utilization, 1990/91 to date

Season 1/	Supply				Utilization			Per capita Gallons
	Production	Imports	Beginning stocks 2/	Total supply	Ending stocks	Exports 3/	Consumption Total	
-- Million gallons, single-strength equivalent --								
1990/91	129.0	1.5	62.6	193.1	45.1	16.4	131.6	0.52
1991/92	119.5	4.2	45.1	168.9	42.1	23.2	103.6	0.40
1992/93	186.3	1.9	42.1	230.4	74.3	22.0	134.0	0.52
1993/94	168.5	0.9	74.3	243.7	63.6	17.4	162.7	0.62
1994/95	190.8	0.9	63.6	255.2	76.2	22.1	157.0	0.59
1995/96	171.5	0.5	76.2	248.2	69.4	26.8	152.0	0.56
1996/97	192.0	0.2	69.4	261.5	89.6	21.3	150.7	0.55
1997/98	166.0	0.2	89.6	255.8	67.8	18.1	166.7	0.60
1998/99	170.9	1.3	67.8	240.0	54.3	25.3	160.3	0.57
1999/2000	203.4	4.1	54.3	262.7	81.9	32.6	147.8	0.52
2000/01	184.9	0.9	81.9	267.7	74.8	39.0	153.9	0.54
2001/02	180.4	0.3	74.8	255.5	83.6	36.3	135.7	0.47
2002/03	141.6	0.4	83.6	225.6	71.7	38.3	115.6	0.40
2003/04	147.8	0.5	71.7	220.0	65.5	42.3	112.2	0.38
2004/05	50.7	11.5	65.5	127.6	35.5	23.9	68.2	0.23
2005/06	80.8	5.6	35.5	121.9	42.0	18.7	61.2	0.20
2006/07	121.4	0.9	42.0	164.4	57.9	20.2	86.3	0.29
2007/08	109.2	0.3	57.9	167.4	59.8	16.1	91.6	0.30
2008/09	83.6	0.5	59.8	143.9	47.8	15.6	80.5	0.26
2009/10	77.1	0.6	47.8	125.5	44.7	12.8	68.0	0.22
2010/11	83.9	0.4	44.7	128.9	36.5	15.8	76.6	0.25
2011/12	76.9	0.5	36.6	114.1	39.9	15.0	59.2	0.19
2012/13 f/	76.4	0.6	39.9	116.9	38.0	15.1	63.8	0.20

1/ As of 1998/99, season begins in October. Previously, it began in December.

2/ Stock data were adjusted beginning with 1989/90 ending stock data to more accurately reflect Florida inventories. 3/ Exports include shipments to territories until 1986/87. f/ = forecast.

Source: USDA, Economic Research Service calculations.

With domestic grapefruit juice production flat, larger beginning stocks will boost total supply by 2 percent to 116.8 million sse gallons—still lower than average. Imports are expected to increase this season, while exports will remain steady, similar to the past 2 seasons. Both supply and domestic use experienced record lows in 2011/12. Ending stocks are anticipated to decline 5 percent in 2012/13, drawn down to supplement increased domestic use. ERS forecasts per capita domestic use to increase slightly from the record-low 0.19 gallons per person in 2011/12 to 0.201 gallons per person.

U.S. Lemon Production 4 percent Above Last Season

The 2012/13 lemon harvest is forecast to increase over last year's freeze-damaged crop to 888,000 tons (table 9). The increase in production represents a 4-percent increase over last season and is 6 percent higher than the 2007/08-2011/12 average of 837,000 tons. The Arizona lemon crop has more than doubled from the 2011/12 harvest of 30,000 tons to a forecast 68,000 tons in 2012/13. Overall, the upcoming harvest is 12 percent under the previous 5-year average of 77,000 tons. Harvest of lemons in central and western Arizona began in mid-November with reported shipment volumes matching the larger crop, according to AMS data. So far through mid-November, Arizona lemon shipments are up threefold compared to the same time last season. While Arizona is anticipating a larger lemon crop, California's lemon crop is expected to remain unchanged at 820,000 tons. Nonetheless, California's current crop estimate is 8 percent stronger than the most recent 5-year

Table 9--Lemons: Utilized production, 2009/10-2011/12 and forecast for 2012/13 1/

State	Utilized			Forecast for	Utilized			Forecast for
	2009/10	2010/11	2011/12	2012/13 as of 12-2012 2/	2008/09	2009/10	2010/11	2011/12 as of 12-2012
	---1,000 boxes 2/---				---1,000 short tons---			
Arizona	2,200	2,500	750	1,700	84	100	30	68
California	21,000	20,500	20,500	20,500	798	820	820	820
Total	23,200	23,500	21,250	22,200	882	920	850	888

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ 76 pound boxes prior to 2010/11, 80 pounds thereafter.

Source: USDA, National Agricultural Statistics Service, *Crop Production Report*.

average. Lemon harvest began in California in mid-July, along the southern coast, with harvest continuing through November. AMS shipments report an 11-percent lower quantity shipped through mid-November compared to the same time period in 2011.

Total lemon shipments (California and Arizona) are down 4 percent through mid-November but as the season progresses shipments should pick up. Imports for the season through the second week of November are down by 15 percent, according to AMS data. Imports based on U.S. Census Bureau data are also down this season through September. Over the past 5 years, an average of 46 percent of lemon imports occurred in the first 2 months of the marketing year. Overall lemon imports this season are expected to be lower, based on data from the first 2 months and on trade being 21 percent lower this season through September. These declining shipments have had a mixed effect on retail prices, with the Bureau of Labor Statistics U.S. city average price weakening since August but remaining above last year's October retail price. Should the U.S. lemon supply continue to arrive at higher market volumes than last season, prices will likely be below 2011/12 monthly prices.

2012/13 Production of Mandarins/Tangerines Forecast at a Record High

Production of mandarins/tangerines continue to increase, setting a record high harvest, if realized. Production is slated at 661,000 tons, up 2 percent from 2011/12 final harvest total of 648,000 tons and 15 percent above the 2007/08-2011/12 average of 574,000 tons (table 10). California is the largest producer of mandarins averaging 64 percent of total production during 2008/09-2012/13.

The largest year-over-year gains are expected in California, with production forecast up 8 percent to 472,000 tons. Florida's production is estimated to decline by 11 percent to 181,000 tons and remains below the previous 5-year average of 216,000 tons. Arizona's mandarin production will remain at 8,000 tons, a third below the 5-year average of 12,000 tons.

Florida's NASS field office reports continuing declines in tangerine acreage in 2012, down 5 percent from 2011 to 18,384 acres, and down 64 percent since 2000. Difficulty with diseases has been a major cause of the substantial decrease in acreage. Competition from international growers and land conversion to development, have also contributed to the decrease. Tangelo production is forecast 4 percent below last season with 50,000 tons.

Table 10--Other citrus: Utilized production, 2009/10-2011/12 and forecast for 2012/13 1/

Crop and State	Utilized		Forecast for		Utilized		Forecast for	
	2009/10	2010/11	2011/12	2012/13 as of 12-2012	2009/10	2010/11	2011/12	2012/13 as of 12-2012
	-----1,000 boxes 2/-----				-----1,000 short tons-----			
Tangelos:								
Florida	900	1,150	1,150	1,100	41	52	52	50
Tangerines:								
Arizona	350	300	200	200	13	12	8	8
California	9,900	10,600	10,900	11,800	371	396	436	472
Florida	4,450	4,650	4,290	3,800	211	221	204	181
Total	14,700	15,550	15,390	15,800	595	629	648	661

1/ The crop year begins with bloom of the first year shown and ends with completion of harvest the following year.

2/ Net pound per box: tangerines--California and Arizona--75 prior to 2010/11, 80 thereafter; Florida--95; tangelos--90;

Source: USDA, National Agricultural Statistics Service, *Crop Production Report*.

Favorable weather conditions have led to harvest starting in late September for Fallglo tangerine varieties, with 100 percent of the fruit harvested by mid-November, according to the FCAC. Sunburst harvest started around mid-October, a week ahead of last season's harvest start, but that production has resulted in identical harvest quantities through mid-November. The FDOC is reporting a 5-percent increase in shipments so far this season through November 4. FDOC is also forecasting another year of declined revenues for specialty citrus, earning a total of \$35.8 million compared to last season's \$38.6 million. Although the crop is of high-quality, lower revenues may be partly reflective of the smaller crop. According to some industry sources, the early and strong start to the tangerine season is causing concern about a possible supply gap between the end of Sunburst harvest and the beginning of late-season honey tangerines.

California production of mandarin/tangerines continues to rise, with production estimated at 472,000 tons, 8 percent above last season's total. A 13-percent increase in bearing acreage since 2010 has led to higher production levels. There are currently over 4,000 acres coming into production in 2012. While bearing acreage has increased, nonbearing acreage in 2012 has dipped substantially below last year's 2,022 nonbearing acres to just 602 acres planted. As of mid-November, harvest was ongoing in tangerine/mandarin orchards.

Ample Avocado Supplies Likely To Repeat in 2012/13

Despite a larger than average crop in 2011/12, initial indications from industry sources suggest California avocado production will be another big one in 2012/13. While there will be fruit on the trees this fall, harvest will not take off until the spring, reaching peak volumes over the summer. Therefore, given that the 2011/12 harvest in California ended in late October, domestic demand during the remainder of this fall and winter will be fulfilled mainly by imports.

With Mexico's growing presence in the U.S. avocado market, Chilean market share has declined significantly in the past 5 to 7 years. Since 2007, about two-tenths of all avocados exported to the United States have come from Chile each year. Chilean avocado producers have broadened their market instead in Europe and South America. According to industry sources, Chile's exports to the United States are likely to be reduced in 2012/13, influenced by drought conditions there during

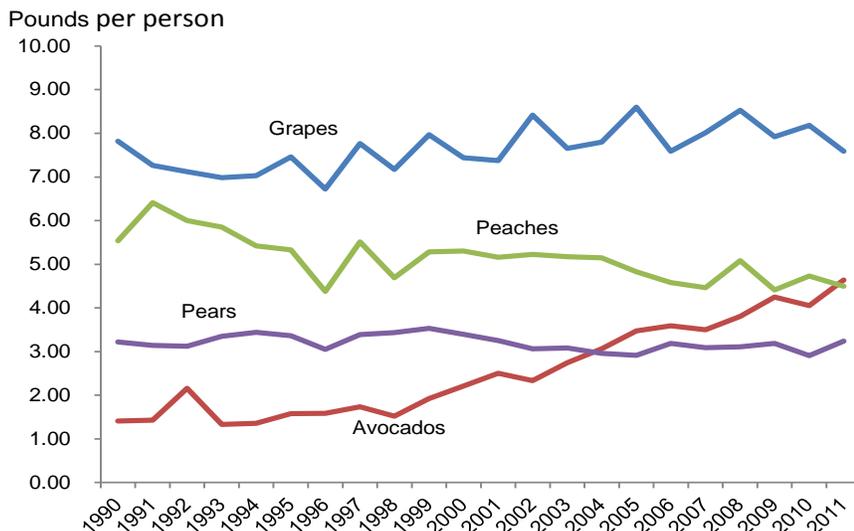
the growing season and by more favorable exchange rates in Europe. AMS shipment data indicate new-season shipments from Chile began arriving in the United States in early September and by late November, season-to-date volumes were down nearly 80 percent from the same period a year ago. Meanwhile, the Avocado Producers and Exporting Packers Association of Michoacan (APEAM), Mexico, indicated a bumper harvest for the 2012/13 season, with exports to the United States projected up by 20 percent in volume from last season. Mexico's large off-bloom crop in 2011/12 provided ample late-season supplies to the U.S. market which coincided with plentiful supplies from California's larger than average crop last season. These occurrences allowed growers in Mexico to hold off harvesting of early fruit from the new crop until around early October. Both the quality and fruit size of Mexico's 2012/13 crop improved as a result because fruit were allowed to stay longer on the trees.

Avocado demand in the United States continues on a rising path with ERS initial 2011/12 estimates for fresh avocado per capita use at a record-high 4.6 pounds, up from 4.1 in 2010/11 and more than double the 2000/01 estimate. At this current estimate, fresh avocado domestic per-capita demand has surpassed demand for fresh pears, matched that for fresh peaches (including nectarines), and is closing in on that for fresh grapes, three more traditionally produced and consumed fruits in the United States (fig. 4).

ERS preliminary estimates show overall avocado supplies in the United States during the 2011/12 season at a record 1.5 billion pounds, up 14 percent from the previous season. Domestic production in 2011 increased 21 percent from the previous year, reaching 442 million pounds (includes California, Florida, and Hawaii) and, imports are projected to total a record 1.05 billion pounds, up 14 percent. Cumulative imports through October show volumes up 34 percent from Mexico, which accounts for over 80 percent of total year-to-date imports, while volumes from Chile are down 42 percent. A large jump in imports is also reported from Peru, with year-to-date volume up 74 percent. Peruvian imports make up 4 percent of the total to date and have already reached half the level of imports from Chile, the second largest source for U.S. avocado imports.

Barring any weather abnormalities, this year's ample supplies in California and Mexico will likely enable retailers to aggressively promote avocados in 2012/13, likely putting downward pressure on avocado prices. Based on AMS data, free-on-board (f.o.b.) shipping-point prices for South District California Hass avocados, all sizes except 84s, averaged around \$25-\$26 per 2-layer carton in October. There were no prices quoted for California Hass in October 2011 as the smaller harvest resulted in an earlier finish to the 2010/11 season. F.o.b. price quotes for Mexican Hass avocados (all sizes except 84s) this October ranged from \$20-\$22 per two layer carton, compared with \$28-\$30 last year. Priced relatively lower than other fruit size, in general, in October, smallest sized avocados (size 84s) ranged from \$19-\$20 per 2-layer carton for South District California Hass and \$18-\$19 for Mexican Hass. As of early November, Chilean Hass f.o.b. prices ranged from \$20-\$23 per 2-layer carton (size 60s and 70s) and Mexican Hass at \$19-\$20 (all sizes, except 84s which were slightly lower). Same time last year, prices averaged higher at \$26-\$27 and \$28-\$29, respectively.

Figure 4
U.S. fresh avocado per capita use gaining ground



Source: USDA, Economic Research Service calculations.

At the retail level, monthly AMS U.S. retail advertised prices data report Hass avocados averaging \$1.08 in October and \$1.15 in November 2012, compared with \$1.16 and \$1.19, respectively, the same time last year.

Lighter Supplies Help Strengthen Kiwifruit Prices

Coming off of a bigger than average crop, a combination of a light fruit set and some weather problems during the early part of the growing season signal a decline in California’s kiwifruit production in 2012/13. California’s Southern growing areas were affected by frost and hail and, while some growers suffered severe losses, overall damage was not widespread. Other production areas benefitted from a relatively mild spring, resulting in an overall good quality crop. Initial estimates from the Kiwifruit Administrative Committee (KAC) indicated crop size during the 2012/13 season will be down by about 30 percent from 2011/12. In the *Noncitrus Fruit and Nuts 2011 Summary* report released in July 2012, NASS estimated the 2011/12 California kiwifruit crop at 42,000 tons, 53 percent above the previous 10-year average. If initial projections from KAC hold true, production in California would drop to around 29,000 tons, still slightly higher than the previous 10-year average.

While typically a low point during the entire marketing season (October-September), early 2012/13 supplies of California kiwifruit are up, with cumulative shipment volume from October through late November up 71 percent from the same period last season, based on AMS data. Although potential crop size is projected to fall short of the previous season, the warmer than normal temperatures this spring and summer advanced crop maturity. Despite increased early-season supplies, reduced imports in this market have avoided downward pressure on domestic kiwifruit prices. Overall import volume in October was down over 40 percent from the same time last year due to much lower supplies from New Zealand. Nearly all imported kiwifruit in the United States has historically come from Chile, New

Zealand, and Italy. Though greatly diminished from peak levels during the summer, lingering supplies from Chile in October were up more than threefold from the same time last year while imports from Italy remained relatively unchanged. Harvest in California had gone in full swing in November and therefore, shipment volumes are expected to rise seasonally for the remainder of the year.

November f.o.b. shipping-point prices for 2012/13 California kiwifruit of the Hayward variety in the Central and Northern San Joaquin Valley through mid-month averaged in the range of \$16-\$17 per 9-kilogram (or 19.8 pounds) container loose for those in the size 27 category, compared with \$13-\$15 the same time last year. For the same period, prices for size 30s and 33s ranged from \$15-\$16, up from \$13-14 a year ago. As California supplies increase seasonally through the remainder of the year, prices are likely to move down from earlier in the season but remain above a year ago. The higher f.o.b. prices so far already indicate stronger grower prices for kiwifruit during the 2012/13 season.

California's kiwifruit bearing area appears to have stabilized to 4,200 acres over the last 4 years after trending down from over 7,000 acres in the late 1980s and early 1990s. Increased availability, particularly for counter seasonal imports, and an ever growing population hungry for health-promoting diets, helped regain some of the lost growth in U.S. kiwifruit demand experienced in the initial years of the 21st century. Following significant declines in 2001/02 through 2003/04, U.S. kiwifruit per capita use began to trend up again, though remaining below the highs of the late 1990s. Domestic kiwifruit demand continued strong into 2011/12, as with export demand, aided in part by increased imports and the large, good-quality California crop last season. ERS's preliminary estimate for U.S. kiwifruit per capita use is at an all-time high of 0.61 pounds in 2011/12, up from 0.50 pounds the previous season and the previous 10-year average estimate of 0.44 pounds.

U.S. kiwifruit exports reached near-record volume in 2011/12 at 22.5 million pounds (or 11,253 tons), valued at \$17.0 million—the highest so far on record. Among the country's top international markets for kiwifruit, export volume rose significantly to Mexico and more than doubled to Japan but was down to more than 10 percent to Canada. Export shipments were also up significantly to a few relatively smaller markets, which included Sweden, Taiwan, Peru, Chile, and the Dominican Republic. Due to strong overall demand, grower prices for California kiwifruit in 2011/12 still increased fractionally from the previous season to \$771 per ton despite a 28-percent increase in production, resulting to a record-high crop value of \$31.4 million, up from the previous 10-year average of \$20.8 million.

Import volume during the 2011/12 season, October through September, increased to a record 135.9 million pounds (or 67,963 tons), up 20 percent from the previous season. Import growth was attributed to significantly higher volumes received from Chile (up 36 percent) and Italy (up 77 percent). Kiwifruit producers in New Zealand continue to battle problems with bacterial canker, dampening the country's exports to the United States. U.S. kiwifruit imports from New Zealand declined 9 percent in 2010/11 from the previous season and again declined in 2011/12 by as much as 31 percent. Shipping the largest kiwifruit volume to the United States over the last 4 years, top-ranked Chile supplied nearly half the total import volume in 2011/12. Most imports from Chile and New Zealand are counter seasonal with California supplies, arriving during the spring and summer time, while those from Italy provide more direct competition with domestic production.

Blueberry Supplies Remain Ample This Winter

The U.S. fresh blueberry market transitions from domestic production to Southern Hemisphere supplies this fall with imports from Chile—the United States' No. 1 supplier of imported blueberries—likely to be near the record high achieved last season. Favorable weather this growing season has benefitted the Chilean blueberry crop, potentially boosting exports this season. Based on data from the Chilean Blueberry Committee, an affiliate of the Chilean Fresh Fruit Exporters Association, Chile is projected to export close to 85,000 tons of fresh blueberries during the 2012/13 season, up 21 percent from last season. Of this volume, projections are that over 75 percent will likely be destined for the U.S. market. If realized, Chile's shipments to the United States potentially could set a new record, providing U.S. retailers ample promotional supplies through the winter months.

Based on AMS shipment data, cumulative import volume from Argentina—another Southern Hemisphere source—was up by as much as 31 percent in October compared with the same time last year but fell significantly below a year ago in November. Early import volume from Chile was also up in October from the same time last year and had also fallen short of last year in November. As Argentine supplies wind down for the season, Chilean supplies are expected to increase seasonally, likely surpassing year-ago volumes this fall and winter, which could put downward pressure on blueberry prices. Volumes from Chile typically start light in early November, and then gain momentum, peaking in January and winding down in late spring.

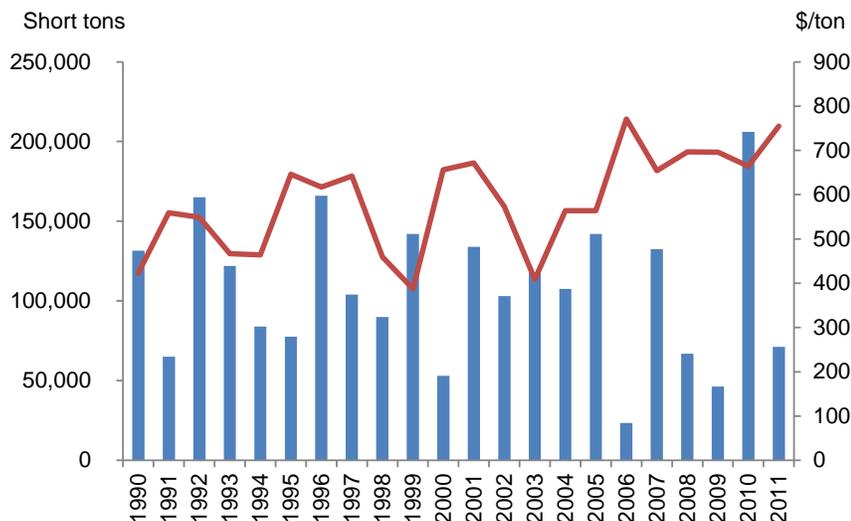
F.o.b. shipping-point prices for Argentine blueberries entering through Miami International Airport from October through early November ranged from \$23-\$26 per flat of 12 (4.4-oz) cups with lids (medium-large) and \$27-\$31 per flat of 12 (6-oz.) cups with lids (medium-large), compared with \$24-\$28 and \$23-\$30, respectively, from the same time last year. At the retail level, fresh blueberry advertised prices in October averaged around \$3.00 per 4.4-ounce and 6-ounce package, down 20-23 cents from average quotes the same time last year, based on AMS data. However, below year-ago shipments in November drove average advertised retail prices higher by as much as 13 cents for the 4.4-ounce package and 6 cents for the 6-ounce package, respectively, compared with their corresponding averages in November 2011.

California Olive Production Forecast Bigger Than Previous 5-Year Average

Olive yields and production are highly variable from year to year, partly due to the alternate-bearing nature of the olive tree. Since 1990, production has ranged from a low of 23,500 tons in 2006 to a high of 206,000 tons in 2010. The most recent estimate for California's 2012 olive crop was forecast by NASS California Field Office in August at 180,000 tons, up more than double last year's crop of 71,200 tons. If realized, this year's crop is 72 percent bigger than the previous 5-year average but smaller than the record set in 2010.

As historically shown, olive prices tends to be higher during small-crop years and lower during years with large crop (fig. 5). The record-low harvest in 2006 led to the highest historical season-average grower price for olives during the 2006/07

Figure 5
Fluctuating production and average grower prices for California olives



Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts Summary*, various issues.

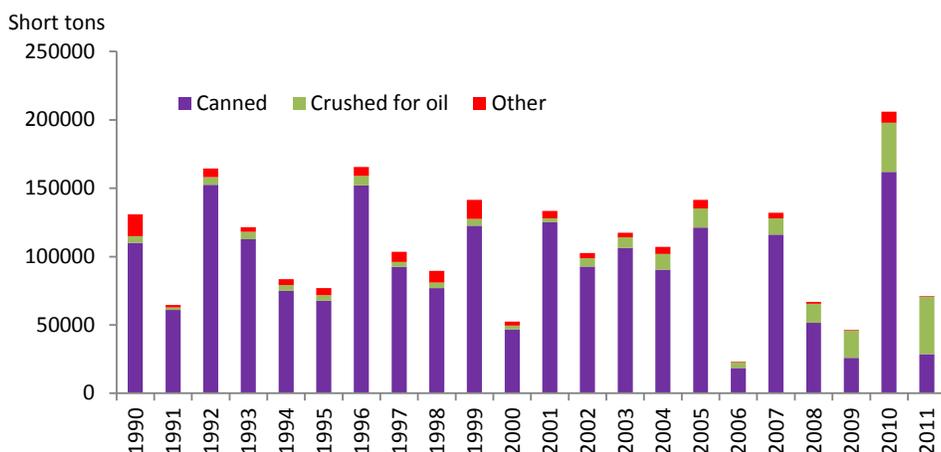
season at \$771 per ton. Since the 1990s, grower prices bottomed at \$387 per ton in 1999/2000, when production was up by nearly 60 percent from the previous season. In 2011/12, crop size declined 65 percent from the record-large 2010/11 crop, boosting last season's average price to a near-record \$755 per ton. Although prices averaged high last season, the huge decline in production more than offset the price increase, driving down the 2011/12 crop value to \$53.8 million, from \$136.8 million in 2010/11 and nearly 20 percent below the previous 5-year average.

All commercial U.S. olive acreage is located in California. After declining in the 1980s, olive bearing acreage reversed its trend during the 1990s until stabilizing for a few years at 36,000 acres from 2000-03. Since then, acreage declined gradually to 30,000 in 2007 and 2008 before climbing again over the last few years, reaching a peak of 41,500 acres in 2011 and to a new record of 44,000 acres estimated for 2012. Recent increases in bearing acreage are attributed to new plantings coming into production, mostly geared toward the growing premium-quality olive-oil niche market in California.

As virtually all California olives are processed, canned olives continue to dominate total production (fig. 6). Production for crushed oil, however, has risen in recent years to the detriment of canned olives, whose share of total output has significantly diminished from an average of almost 90 percent from 1980-2008 to slightly less than 60 percent from 2009-11. At the same time, production crushed for oil has made only up less than 10 percent of total output throughout most of 1980s, 1990s, and from 2000-03 but has since ascended to an average of 23 percent over the last 8 years, reaching a high of 59 percent in 2011. This year, the NASS California Field Office forecast 94,000 tons will be destined for canning, 52 percent of total production, while 86,000 tons will be crushed for oil, or 48 percent of the total.

The domestic market serves as the primary outlet for California canned olives, although imports have surpassed domestic production in fulfilling U.S. demand throughout most of the past decade. Exports, on the other hand, continue to account

Figure 6
Olive utilization for canning dominates processed production but share is diminishing



Source: USDA, National Agricultural Statistics Service, *Noncitrus Fruit and Nuts Summary*, various issues.

for a small share of the California canned olive market (except during the fairly small production years of 2006/07, 2009/10, and 2001/12, when shares were between 10-20 percent). Annual average volumes have increased from around 4 million pounds (or 2,000 tons) in the 1980s to 6 million pounds (or 3,000 tons) over the past decade. The bulk of the exports go to neighboring countries—Canada and Mexico—with the former taking up more than half of total export volume.

In the past 10 years, U.S. canned olive imports averaged over 220 million pounds, product weight basis, or nearly 60 percent of total domestic use. Although no data are available for canned olive inventories, two consecutive years of declining production beginning in 2008/09 likely tightened inventories, lowering overall domestic supplies and boosting import demand in the United States to a record-high 260 million pounds in 2009/10 or 84 percent of total domestic use. Spain remains the No. 1 source of imported canned olive in the United States, accounting for slightly over 60 percent of total import volume in the last 5 years. This share is down from over 80 percent during 2000/01-2002/03, with Morocco, Greece, and Argentina increasing market share.

Pecan Production Rebounds in 2012/13

In October, NASS released the first official estimate for the upcoming pecan harvest, pinning it at 14 percent above the 2011/12s 308.6 million pounds (inshell basis). If realized, this crop would be the largest harvested since the 387.3 million pounds (inshell basis) harvested in 2007. The 2012/13 pecan harvest is an off-year harvest but is a strong off-year harvest, 45 percent above the previous 5-year off-year average. Texas pecans have somewhat recovered from the 2011 drought, with production increasing by 75 percent in 2012 to 55 million inshell pounds. Georgia's crop is marginally smaller this year, declining from 102 million inshell pounds to 100 million inshell pounds. The harvest season started around 2 weeks earlier than usual in some regions, promoting the possibility for harvest to be finished by early December. AMS is reporting a slowing of imports via Mexico (no country of origin specified, just trade entering from Mexico), with inshell shipments

down 50 percent from August through mid-November, while shelled shipments are up by 12 percent.

The 2011/12 pecan season experienced strong exports totaling 88.5 million pounds inshell, just 3 percent below the record in 2007/08. Hong Kong remains the leading export destination with 45.5 million pounds of inshell pecans, up 39 percent from 2010/11. Hong Kong acquired 52 percent of all U.S. inshell pecan exports. Vietnam was the second largest in-shell pecan market with 22.9 million pounds, more than triple the shipments from the previous season. While exports grew substantially to Vietnam, U.S. inshell pecan shipments to Mexico dropped 36 percent to 14.3 million pounds. As for shelled pecan exports, Canada remains the top market for the United States with 10.3 million pounds, stepping up shipment levels from 2010/11 by 22 percent. Mexico advanced to second place in the shelled pecan market at 7.4 million pounds, followed by the Netherlands with 5.1 million pounds.

Fruit and Tree Nuts Trade Outlook

Exports Decline for Oranges and Juice, Rise for Most Noncitrus Fruit

With the 2011/12 orange marketing season winding down, exports are down nearly 6 percent from November through September, compared with the same period the previous season (table 11). Despite above-average production of U.S. fresh oranges in 2011/12, strong domestic demand kept supplies within this market for use in processing and in the fresh market. South Korea received the bulk of U.S. orange exports, with 400 million pounds through September, a 30-percent increase over the same period in 2010/11. Even with ample processing orange production in 2011/12, U.S. exports of frozen concentrate orange juice (FCOJ) declined 50 percent from the record volume in 2010/11. Low orange juice stocks at the beginning of the season and reduced imports drove down overall domestic supplies, limiting exportable supplies. Fresh grapefruit saw a 48-percent decline in 2012/13 exports to date, after last season's strong start to the marketing year. Volumes should increase as the season continues, but will likely remain close to last year's volumes due to decreases in Texas and Florida grapefruit production. U.S. fresh grapefruit shipment volumes to Canada has more than doubled this season through September, while those to South Korea has declined to 168,000 pounds, from 3.2 million pounds last year.

U.S. fresh apples are experiencing strong demand in the international market, receiving around a 23 percent increase in 2012/13 export volume through September compared with the same period last season. Although weather problems during the growing season has largely contributed to thin crops in the Eastern and

Table 11--U.S. exports of selected fruit and tree nut products

Commodity	Marketing season	Season-to-date (through September)		Year-to-date change
		2011	2012	
		----- 1,000 pounds -----		Percent
Fresh market:				
Oranges	November-October	1,636,602	1,541,303	-5.8
Grapefruit	September-August	8,746	4,545	-48.0
Lemons	August-July	12,932	14,339	10.9
Apples	August-July	136,592	168,505	23.4
Grapes	May-April	328,098	399,457	21.7
Pears	July-June	62,673	78,152	24.7
Peaches (including nectarines)	January-December	199,057	188,309	-5.4
Strawberries	January-December	241,836	260,720	7.8
Cherries	January-December	156,224	222,239	42.3
		----- 1,000 sse gallons 1/ -----		
Processed:				
Orange juice, frozen concentrate	October-September	118,551	58,787	-50.4
Orange juice, not-from-concentrate	October-September	82,432	86,089	4.4
Grapefruit juice	October-September	15,800	15,194	-3.8
Apple juice and cider	August-July	1,648	1,309	-20.5
Wine	January-December	82,152	76,913	-6.4
		----- 1,000 pounds -----		
Raisins	August-July	56,966	54,858	-3.7
Canned pears	June-May	4,662	5,770	23.8
Canned peaches	June-May	18,780	18,826	0.2
Frozen strawberries	January-December	34,382	39,700	15.5
		----- 1,000 pounds -----		
Tree nuts:				
Almonds (shelled basis)	August-July	176,062	197,265	12.0
Walnuts (shelled basis)	September-August	6,720	6,824	1.5
Pecans (shelled basis)	October-September	61,355	76,561	24.8
Pistachios (shelled basis)	September-August	12,659	6,314	-50.1

1/ Single-strength equivalent.

Source: U.S. trade data provided by the U.S. Department of Commerce, U.S. Census Bureau.

Central U.S. apple-growing regions, the large harvest and good quality of the crop in Washington State has helped keep export shipments flowing at a faster pace than last season to date. As of November 1, the U.S. Apple Association reported fresh apple holdings up 4 percent from the same time a year ago, supporting increased availability for fresh use. Prospects of reduced production in some of the leading export markets for U.S. apples, particularly Canada and Mexico, will potentially keep U.S. export demand strong in 2012/13. Over the first 2 months of 2012/13, export volume to Canada rose 4 percent from the same 2 months in 2011/12 and up 79 percent to Mexico. Among other leading export markets for U.S. apples, gains were moderate to Hong Kong and steep to Taiwan, Malaysia, and the Dominican Republic. Initial projections from USDA peg U.S. fresh apple exports in 2012/13 at 1.93 million pounds or 875,000 metric tons (mt). If realized, this will be a new record high, up 4 percent from the previous record in 2011/12, which also reached an all-time-high value of \$997 million.

This season's fresh pear exports, July through September, totaled 78.1 million pounds, 25 percent above last year the same time. Exports are showing strong gains to Mexico (up 30 percent), Canada (up 35 percent), United Arab Emirates (up 63 percent), Taiwan (up 63 percent), and India (up 18 percent) for a combined total representing 86 percent of total volume to date. Another 5 percent went to Brazil and Russia where volumes were down 27 percent and 2 percent, respectively. Mexico is the United States' leading export market for fresh pears and strong export performance to that market so far in 2012/13 has been abetted by the lifting of the retaliatory import tariff related to the cross-border trucking dispute. Lighter crops in Canada and Russia will continue to stimulate demand for U.S. fresh pears in those markets but reduced production in the United States will likely limit the industry's overall export potential in 2012/13. Moreover, with bigger crops expected in Argentina and China, U.S. fresh pears will likely face increased competition from these two countries in some of its important markets such as Brazil, Russia, India, and other Asian markets. USDA forecast 2012/13 U.S. fresh pear exports at 375 million pounds (or 170,000 mt), down 11 percent from 2011/12.

U.S. fresh grape exports for the 2012/13 season are up 22 percent, May through September, relative to the same time the previous season. Season-to-date exports were up to top market, Canada, and other important markets, including Mexico, Indonesia, Australia, Taiwan, and the Philippines. Although the 2012 U.S. grape crop is down slightly from the previous year, California's table grape crop benefitted from favorable weather this spring and summer, with crop quality and availability working together to attract export demand. For the 2012/13 season overall, U.S. fresh grape exports are forecast by USDA to reach 838 million pounds (or 380,000 mt), 10 percent higher than in 2011/12.

Ample production of U.S. sweet cherries in 2012 contributed to strong U.S. cherry exports, with season-to date volumes up 42 percent from the same period a year ago. Season-to-date exports already broke all-time records for both volume (222 million pounds) and value (\$506.1 million). Export volume is up 22 percent to Canada, the top export market for U.S. cherries. Export value to Canada amounted to \$148 million on 78.7 million pounds—both achieving record-high levels. Completing the top five export markets for U.S. cherries are Hong Kong, South Korea, Taiwan, and Japan. Shipments volumes to Hong Kong and South Korea doubled from last year while those to Taiwan and Japan also rose.

Almonds are performing strong with a 12-percent increase in exports through September, aided by the anticipated record breaking harvest in 2012/13. Harvest began in August and ended in early November. As an average 70 percent of total harvest is typically exported annually, exports are expected to at least match last season's record-high levels. Walnut export shipments are off to a slightly better start than last season in September. Despite a smaller crop, the 2011/12 pecan marketing year ended with record-high exports, up 25 percent from the previous season's volume. Early pistachio exports are lagging in 2012/13 compared to last season. Pistachio supplies typically start to pick up in November and continue through late spring, increasing export availability.

Domestic Demand Pushes Orange, Apples, and Pear Imports Up

As the domestic orange crop closes in on the end of the marketing season, imports are up 40 percent from the same period last season (table 12). While domestic production remains relatively flat from the previous season, U.S. processor demand increased for U.S. processing oranges, triggered by the fungicide contamination of imported orange juice, forcing them to source more from domestic growers. In fact, fresh orange imports from July through September have been substantially larger than the previous season. Chile has supplied 104.5 million pounds season to date, a 50 percent increase from 2010/11.

FCOJ imports fell nearly 17 percent during the 2011/12 marketing season from the previous season. Imports of orange juice started very strong, but declined substantially following the January announcement of fungicide contamination in

Table 12--U.S. imports of selected fruit and tree nut products

Commodity	Marketing season	Season-to-date (through September)		Year-to-date change
		2011	2012	
		----- 1,000 pounds -----		Percent
Fresh market:				
Oranges	November-October	174,437	240,384	37.8
Tangerines (including clementines)	October-September	328,963	316,572	-3.8
Lemons	August-July	68,038	53,771	-21.0
Limes	January-December	599,031	722,409	20.6
Apples	August-July	49,397	72,704	47.2
Grapes	May-April	308,132	362,275	17.6
Pears	July-June	5,312	7,646	44.0
Peaches (including nectarines)	January-December	94,913	80,628	-15.1
Bananas	January-December	7,409,221	7,712,403	4.1
Mangoes	January-December	753,889	723,426	-4.0
		----- 1,000 sse gallons 1/ -----		
Processed:				
Orange juice, frozen concentrate	October-September	198,397	165,272	-16.7
Apple juice and cider	August-July	96,728	73,308	-24.2
Wine	January-December	184,646	222,709	20.6
		----- 1,000 pounds -----		
Canned pears	June-May	11,029	13,680	24.0
Canned peaches (including nectarines)	June-May	36,959	44,305	19.9
Canned pineapple	January-December	571,165	549,586	-3.8
Frozen strawberries	January-December	165,650	190,813	15.2
		----- 1,000 pounds -----		
Tree nuts:				
Brazil nuts (shelled basis)	January-December	12,165	10,645	-12.5
Cashews (shelled basis)	January-December	180,844	183,682	1.6
Pine nuts (shelled basis)	January-December	1,227	348	-71.7
Pecans (shelled basis)	October-September	70,669	73,009	3.3

1/ Single-strength equivalent.

Source: U.S. trade data provided by the U.S. Department of Commerce, U.S. Census Bureau.

Brazilian orange juice, the largest global supplier of orange juice. The reduction pushed up prices, also tempting domestic processors to keep product in the country to capture the higher price levels. Imports from Brazil fell 20 percent in 2011/12.

U.S. lemon imports are down 20 percent in 2012/13, August through September. The rebound in domestic production, after the 2011/12s large weather-induced declines, has reduced the dependency on imports. As domestic demand declines seasonally, lemon imports should remain below the 2011/12s levels which were the highest imports since 2007/08.

With the lack of growth in domestic production, import volume for U.S. fresh apples and pears in 2012/13 through September advanced over the same period in 2011/12, helping to fulfill domestic demand especially as some regional markets in the country face tight supplies and the export market remains bullish. Year-to-year increases in import volumes for both were up by over 40 percent. Fresh apple shipments to the United States rose significantly from Chile and New Zealand and doubled from Canada, for a combined volume representing almost all of total imports to date. Southern Hemisphere shipments of fresh pears to this market also rose significantly, mostly from Chile, Argentina and the Republic of South Africa while pear shipments were up 7 percent from South Korea.

Fresh grape imports, May through September, increased 18 percent in volume from the same time last season, totaling 362.3 million pounds. Most of this growth is attributed to increased shipments from Mexico which supplied 90 percent of this volume. Imports also rose from Chile, Canada, Italy, and Brazil, which accounted for most of the remaining volume. Projected increased exports from Chile signal the potential for higher U.S. fresh grape imports during the upcoming winter and early spring—the off-season for domestic production. USDA forecast U.S. fresh grape imports in 2012/13 to increase 3 percent from last season to 1.26 billion pounds (or 570,000 mt).

*A Dietary Assessment of Fruit Consumption*¹

Americans have increased their consumption of fruits since 1970, but the average American diet still falls short of the daily recommendations for fruits. This shortfall is troublesome given that a diet rich in fruits is relatively low in calories, high in several nutrients, and lowers the risks of many chronic illnesses, including certain types of cancer (*Dietary Guidelines of Americans*, 2010).

Increasing the consumption of fruits has been a mainstay of the *Dietary Guidelines for Americans*, which is published jointly by the U.S. Department of Agriculture and the U.S. Department of Health and Human Services. Since 1980, the *Guidelines* have targeted dietary recommendations based on the most current scientific evidence for Americans over 2 years old. Core dietary messages are consistent, even as subsequent editions change slightly to reflect the latest scientific and medical information on nutrition and health. The 2010 *Dietary Guidelines* stress the importance of increasing the amount of vegetables, fruit, whole grains, low-fat dairy, and seafood in order to close nutrient gaps and move toward healthier eating patterns.

This article updates the fruit section of an earlier Economic Research Service (ERS) report (Wells and Buzby, 2008) by: (1) examining the amount and variety of fruits available for consumption in the United States between 1970 and 2010; and (2) comparing the amount of fruits consumed by the average American in 2010 with the amount recommended in USDA's Food Patterns, as listed in Appendix 7 of the 2010 *Dietary Guidelines for Americans*.

Fruits Available for Consumption

Eating patterns shift over time in response to changes in food prices and income levels, availability of food through domestic production and trade, product convenience, exposure to new cuisines, and evolving dietary guidelines. According to ERS's Food Availability data series, the total amount of fruits (fresh and processed in fresh-weight equivalent) available for consumption in the U.S. food supply increased 9 percent, from 237.5 pounds per person in 1970 to 258.3 pounds per person in 2010 (table 1A). This 9-percent increase was not distributed equally among the 60-plus fruit products covered in the ERS data. Much of the rise came mainly from the noncitrus group in the fresh and juice segments. Canned and dried fruits declined during this period by 32 percent while frozen fruits rose steadily (due to berries) from 3.9 pounds per person in 1970 to 5 pounds in 2010.

The growth in fresh noncitrus—from 71.7 pounds per person in 1970 to 106.4 pounds in 2010—was mainly contributed by bananas, strawberries, grapes, pineapples, cantaloupes, and avocados, among others, while apples, cranberries, peaches, and plums faced a decline. Similarly, the per capita availability of noncitrus juices rose 152 percent during this period, from 14.4 pounds in 1970 to 36.2 pounds in 2010. Apple juice particularly quadrupled since 1970. Grape and cranberry juice also rose during this period, while pineapple and prune juice decreased 20 percent and 75 percent, respectively.

¹Hodan Farah Wells, Crops Branch, Market and Trade Economics Division, ERS, USDA.

Table 1A— Per capita availability of fruits, 1970 and 2010

Item	Per capita availability 1/		Change, 1970 to 2010	2010 Loss- adjusted food availability 2/
	1970	2010		
	<i>Pounds, fresh-weight equivalent</i>		<i>Percent</i>	<i>Cups/day</i>
Fruits by market category:				
Fresh fruits	100.6	127.9	27	0.40
Processed fruits 3/	136.9	130.3	-5	0.39
Canned	25.9	14.8	-43	0.05
Frozen	3.9	5.0	29	0.03
Dried	9.9	9.4	-4	0.03
Juice	96.6	100.5	4	0.28
Fruits by commodity:				
Fresh apples	17.0	15.5	-9	0.11
Fresh bananas	17.4	25.6	47	0.08
Fresh oranges	16.2	9.7	-40	0.02
Fresh strawberries	1.7	7.3	320	0.03
Fresh watermelons	13.5	15.5	15	0.04
Apple juice	6.4	26.6	318	0.08
Orange juice	68.6	54.4	-21	0.15
Grape juice	2.4	4.0	71	0.01
Canned applesauce	5.6	3.8	-32	0.01
Canned peaches	6.7	3.0	-55	0.01
Raisins	5.7	6.2	8	0.02
Total fruits 4/	237.5	258.3	9	0.79

1/ Aggregate data, unadjusted for cooking losses, plate waste, and other losses.

2/ Adjusted for cooking losses, plate waste, and other losses. The USDA Food Pattern, 1 cup of fruit or 100% juice, or 1/2 cups of dried fruit can be considered as 1 cup from the fruit group.

3/ Includes other apples.

4/ Includes fresh and processed vegetables.

Source: USDA, Economic Research Service.

Per capita availability of citrus fruit, on the other hand, faced a sharp decline. Between 1970 and 2010, fresh citrus and juice fell 25 percent and 22 percent, respectively. Oranges and grapefruits were mainly responsible for this drop in part due to weather's impact on production and disease problems, especially with regards to citrus canker and citrus greening, of which eradication efforts have resulted in reduced citrus acreage, particularly in Florida, in recent years. Oranges and grapefruits, which accounted for most fresh citrus (58 percent), decreased nearly by a half, from 24.4 pounds per person in 1970 to 12.5 pounds in 2010. Likewise, orange and grapefruit juice availability dropped by one-quarter during this period, from 79.9 pounds person in 1970 to 59.2 pounds in 2010.

But not all citrus fruits faced a decline; per capita availability of fresh tangerines/mandarins, tangelos, lemons, and limes more than doubled, from 4.5 pounds in 1970 to 9.1 pounds in 2010. Similarly, lemon and lime juice more than doubled during this period, although each only account for a relatively small share of total citrus juice per capita use. The increased availability of these fruits was a result of increased production for tangerines/mandarins and increased imports for fresh lemon, lime, and tangerines. In particular, changing consumer preference for easy-peel seedless fruits has led to more production in California.

Dietary Assessment of Fruits

Per capita availability of fruits in the U.S. food supply has increased since 1970. But how does this upward trend compare with recommendations in the 2010 *Dietary Guidelines*? According to Loss-Adjusted Food Availability data, the average American consumed 0.8 cup of fruits per day in 2010. The Loss-Adjusted Food Availability data adjusts the Food Availability data for losses from farm to fork and then converts volume in pounds per year into cup-equivalents per day. While 0.8 cup of fruits per day is 23 percent above the 1970s amount of 0.6 cup, it is still well below the current *Guidelines* recommendation of 2 cups per person based on a 2,000-calorie-per-day diet.²

Although Americans have, on average, increased their overall consumption of fruits and have increased their variety of intake, they are still short of the current *Dietary Guidelines*. Intake would need to increase by 61 percent (1.2 cups per person per day) in order to meet the current requirement. In terms of variety, Americans are not varying their fruit intake. For instance, 5 products out of the 60-plus fruit products, accounted for 58 percent of total fruit consumption in 2010—orange juice (19 percent), fresh apples (13 percent), apple juice (10 percent), bananas (10 percent), and watermelon (5 percent).

ERS Food Availability (Per Capita) Data System

The ERS Food Availability (Per Capita) Data System consists of three data series—the Food Availability data, the Loss-Adjusted Food Availability data, and the Nutrient Availability data. The system provides unique and detailed estimates for the amount of food and nutrients available for human consumption in the United States.

The first series, the Food Availability data, is a commonly used proxy for food intake and its components are collected directly from producers and distributors using techniques that vary by commodity. In general, the data are calculated as the sum of annual production, beginning stocks, and imports minus exports, ending stocks, and nonfood uses. Results depict the amount of food available for human consumption on an annual basis and are the only source of time-series data on food availability in the country. Although the Food Availability data series does not directly measure actual consumption or quantities ingested, it provides an indication of whether Americans, on average, are consuming more or less of various foods over time.

The second series, the Loss-Adjusted Food Availability data (derived from Food Availability data) subtracts the estimated amount of food lost due to spoilage and other losses at three stages in the marketing system (farm, retail, and consumer level). The loss-adjusted data are converted from pounds per capita per year into daily per capita food intake in two forms—*food pattern equivalents* and calories per person per day. For each food supply commodity, a *food pattern equivalent*

²The 2010 *Dietary Guidelines for Americans* break down daily recommendations into 12 calorie levels ranging from 1,000 to 3,200 calories per day. In this article, the 2,000-calorie-per-day reference level is used for consistency with the 2008 Wells and Buzby report.

was defined, with size based on USDA's MyPyramid Equivalents Database (MPED) and weight based on USDA's Nutrient Database for Standard Reference (NDB). *Food pattern equivalent* weights for individual commodities are aggregated to total daily amounts for the five major USDA food groups, plus the amounts for added sugars and sweeteners and for added fats and oils. Aggregated amounts for each food group are then compared with the amount recommended in the USDA's Food Patterns, as listed in Appendix 7 of the 2010 *Dietary Guidelines for Americans*.

The third series, the Nutrient Availability data, is compiled by USDA's Center for Nutrition Policy and Promotion (CNPP), using the Food Availability data to calculate the nutrient content of the U.S. food supply. This historical data series estimates the amounts per capita per day of food energy (calories) and 27 nutrients and dietary components (i.e. protein, carbohydrates, fats, vitamins, and minerals) in the Nation's food supply.

The discussion in this article is drawn from the ERS Loss-Adjusted Food Availability Data ([http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx)), August 2012.

References

Finkelstein, E.A., J.G. Trogdon, J.W. Cohen and W. Dietz. "Annual Medical Spending Attributable To Obesity: Payer- and Service-Specific Estimates," *Health Affairs*, 28, No. 5 (2009):w822-w831.

Pollack, S. "Consumer Demand for Fruit and Vegetables: The U.S. Example," *Changing Structure of Global Food Consumption and Trade, Agriculture and Trade Report*, WRS-01-1, USDA, Economic Research Service, May 2001, pp. 49-54, http://www.ers.usda.gov/media/293645/wrs011_1_.pdf

Ogden, C. L., M. D. Carroll, B. K. Kit, and K. M. Flegal. "Prevalence of Obesity in the United States, 2009–2010," National Center for Health Statistics, *NCHS data brief*, No. 82, January 2012, <http://www.cdc.gov/nchs/data/databriefs/db82.pdf>

U.S. Department of Agriculture, Economic Research Service, *ERS Food Availability (Per Capita) Data System*, August 2012, [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx).

U.S. Department of Agriculture and U.S. Department of Health and Human Services. *Dietary Guidelines for Americans*, 2010, 7th edition, <http://www.cnpp.usda.gov/DGAs2010-PolicyDocument.htm>

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. "Behavioral Risk Factor Surveillance System Prevalence Data," August 2012, <http://apps.nccd.cdc.gov/brfss/>

Wells, H.F., and J.C. Buzby. *Dietary Assessment of Major Trends in U.S. Food Consumption, 1970-2005*, EIB-33, USDA, Economic Research Service, March 2008, http://www.ers.usda.gov/media/210681/eib33_1_.pdf

Trans-Pacific Partnership: New Trade Opportunities for Horticulture¹

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On November 12, 2011, the leaders of the nine Trans-Pacific Partnership countries—Australia, Brunei, Chile, Malaysia, New Zealand, Peru, Singapore, Vietnam, and the United States—announced broad outlines for an ambitious, 21st Century Trans-Pacific Partnership (TPP) agreement (Office of U.S. Trade Representative; Fergusson and Vaughn). TPP is a plurilateral free trade agreement that has the objective of enhancing trade and investment among the TPP partner countries, thus promoting innovation, economic growth and development, and supporting the creation and retention of jobs. The framework includes improved market access and the elimination of trade barriers. In addition to the nine core TPP countries, Canada and Mexico have recently joined the negotiations and Japan is considering joining.² Participating countries took part in the 15th round of discussions in New Zealand this December. While TPP has far-reaching implications for all sectors of the economy, understanding the value of the agreement is particularly important to the food and agricultural sector.

The U.S. horticultural sector shares a strong interest in the outcome of TPP negotiations, as fruit and vegetable trade patterns continue to be influenced by a range of trade-distorting policies.³ The horticultural sector faces a large number of high tariff rates as well as tariff-rate quotas, some of which are characterized by cumbersome administrative procedures and over-quota tariff rates at towering levels. Moreover, phytosanitary and technical measures have affected trade by limiting or blocking select horticultural products from world markets.

This article examines the possible impacts that the TPP agreement might have on U.S. horticultural trade. The 11 TPP partners of the United States, including Japan, have a population of 475 million people, and a combined gross domestic product (GDP) estimated at over \$11.5 trillion in 2011. They are a growing market for U.S. horticultural exports; hence the interest in how this agreement might impact the United States. The objective of this article is to identify and discuss issues affecting U.S. trade in produce, with an emphasis on fruit and nuts, which are likely to be considered during the TPP negotiations. By way of providing context for this review, a brief overview of global trade patterns and the role of U.S. horticultural trade are examined in the subsequent section.

Growth in U.S. and Global Horticultural Trade

Over the past decade, growth in global horticultural trade has been substantial. According to United Nations' *Comtrade* database, fruit and vegetable trade rose from over \$90 billion in 2000 to nearly \$218 billion in 2010 (and comprises almost 21 percent of global food and animal product trade. From a U.S. perspective, similar trends are observed. Fruit and vegetable imports and exports more than

² The Philippines, South Korea, and Taiwan have also expressed interest in becoming members, but would likely have to await the conclusion of the current negotiations before being considered for accession. While not yet a negotiating partner, we include Japan in our analysis.

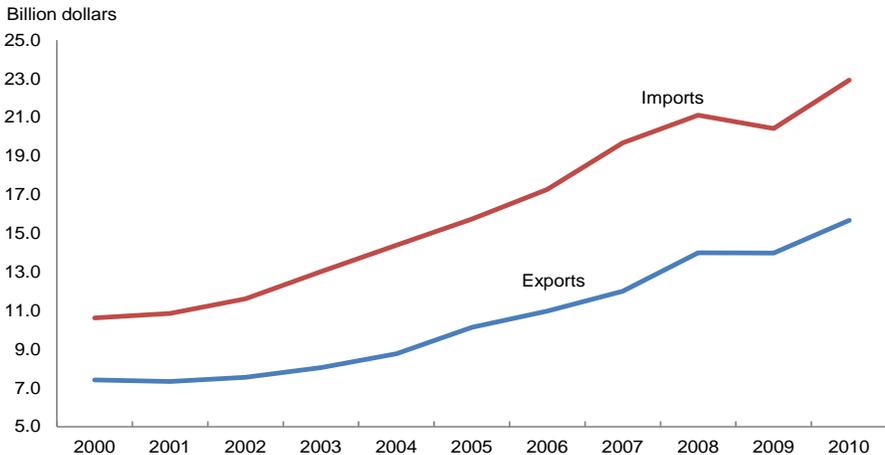
³ For the purpose of this article, the general terms, "fruit and vegetable" and "horticulture" refer to all vegetable, fruit and nut products, both fresh and processed.

doubled in value, reaching \$22.9 billion and \$15.7 billion, respectively, or about 26 percent of U.S. food and agricultural imports and 13 percent of exports in 2010 (fig. 1B).

The 11 countries (including Japan) that would partner with the United States to form the TPP have been a growing market for U.S. horticultural trade, with U.S. exports to these countries increasing from almost \$4.5 billion in 2000 to \$8.1 billion in 2010. U.S. horticultural imports from these countries during this period increased even faster, from \$5.2 billion to \$13.5 billion. Canada was the United States’ largest export market in 2010 (at \$4.9 billion) and Mexico the largest source of imports (at \$7.7 billion). Despite this growth, the TPP region’s importance as a destination for U.S. exports has declined relative to other countries in recent years. In 2000, the United States sent 60 percent of its horticultural exports to TPP countries. This share has since declined to 52 percent in 2010. On the import side, however, these TPP countries have been a growing source of horticultural imports, with their share of the U.S. import market increasing from 50 percent in 1996 to 59 percent in 2010. As a result, the United States has gone from being a small net exporter of horticultural products to a large net importer in the North American region. In 2010, the United States had a negative trade balance (over \$5.6 billion) in the horticultural sector with TPP countries. With respect to TPP countries overall, Mexico, Chile, Peru, Vietnam, and New Zealand ran a trade surplus with the United States while the remaining six countries served as net importers.

There are at least four key long-term factors underlying the increase in fruit and vegetable trade patterns. First, the integration of millions of consumers from emerging markets into the global economy has substantially contributed to the expansion of horticultural trade. Wealthier consumers in these countries have expressed strong interest in product quality, variety, convenience, and the benefits of healthy and nutritious fruit and vegetables. Second, technological innovations, most notably in communication and transportation, have lowered the transaction cost of international trade. For example, retailer Ahold adapted Google Apps Premier Edition to provide a single web-based communication system among its global employees that includes a messaging platform, sharing of calendars, video

Figure 1B
U.S. horticultural trade value, 2000-10



Source: United Nations, Comtrade database.

capability, and automatic language translation.⁴ Third, the global consolidation of the grocery industry has encouraged increased coordination and integration of grower/shipper operations and improved supply chain efficiency. Retail chains like Wal-Mart and Carrefour have opened hundreds of stores in developing country markets and source globally year round. Fourth, the 1995 World Trade Organization (WTO) Agreement on Agriculture and regional preferential trading arrangement have reduced barriers to horticultural trade. The North American Free Trade Agreement (NAFTA) has helped provide a liberalized trading environment within North America and can partially explain the large increase in fruit and vegetable trade among the United States, Canada and Mexico.

For horticultural products, the harmonized commodity coding system (HS) is divided into three subcategories: edible vegetables (HS 07 – fresh or chilled), edible fruits and nuts (HS 08 – fresh chilled, or dried), and preparations of vegetables, fruits, nuts, or other parts of plants (HS 20). U.S. horticultural exports comprised approximately 44 percent edible fruit and nuts, 26 percent edible vegetables, and 30 percent processed fruits and vegetables in 2010. Here, the focus is on the U.S. industry's competitiveness in edible and processed fruits and nuts, both in foreign markets and in the United States where there is increasing competition from foreign suppliers.

Key Sectors for U. S. Fruit and Nut Trade

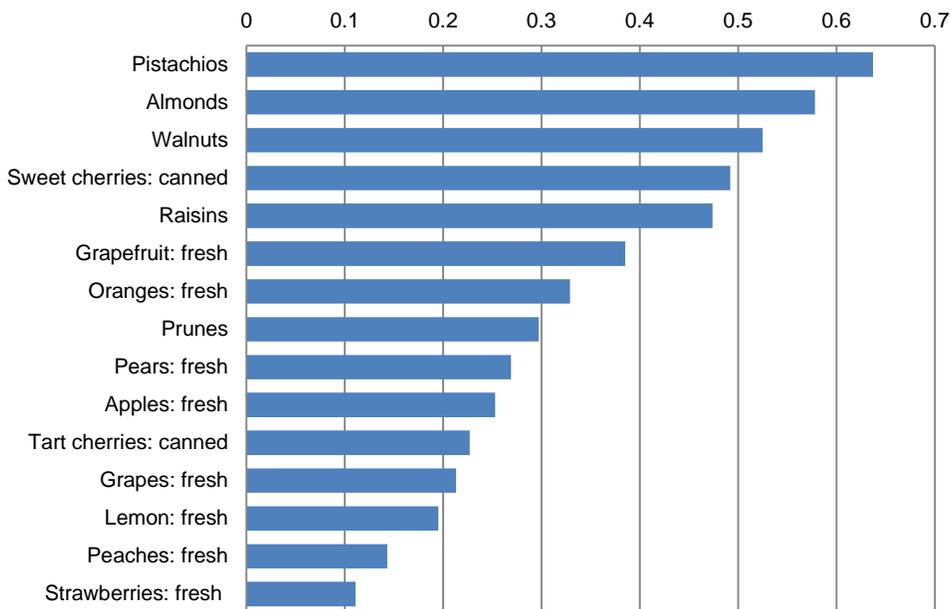
Exports play an important and sometimes critical role for U.S. growers of select fruits and nuts. Several individual U.S. fruit and nut exports account for a significant percentage of the total volume of U.S. supply (fig. 2B). For example, exports of pistachios, almonds, and walnuts each make up over 50 percent of the volume of U.S. supply. Select fresh, canned, and dried fruit are also highly dependent on exports—grapefruit, canned cherry, and raisin exports for example comprise between 35 to nearly 50 percent of U.S. supply.

While the United States is one of the largest world producers of fruits and nuts, there are several reasons why the United States imports many of these products as well. Some imports are tropical products that are in demand by U.S. consumers but cannot be produced in sufficient quantities domestically (fig. 3B). Bananas, pineapples, mangoes, and limes are clear cut examples. Other products are purchased to complement the U.S. seasonal pattern of production, such as grapes, plums, and blueberries. Still other imports compete directly with U.S. production. Spanish clementines, for example, are marketed mainly in the U.S. winter months, vying for consumer attention with California oranges and mandarins.

U.S. Fruit and Nut Exports – The United States exports a wide variety of edible fruit (HS 08) (table 1B). However, the leading five products account for a significant portion of this trade, approximately 28 percent. In the 2008-2010 period, apples and grapes topped the list of fresh fruit exports, with global sales

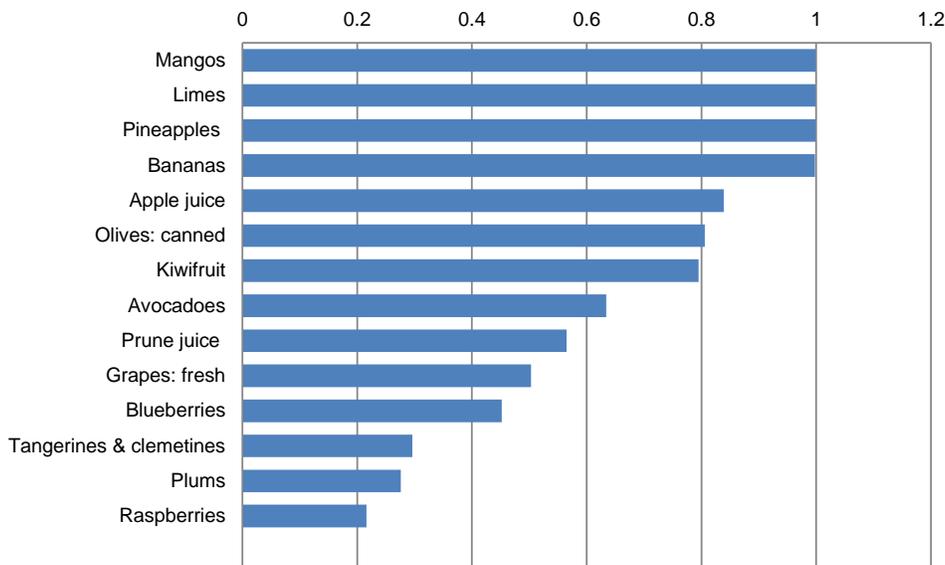
⁴ CBR Enterprise Applications. “*Global Food Retailer Moves 55,000 Employees to Google Apps.*” *Enterprise Application News*, September 17, 2010. <http://enterpriseapplications.cbronline.com/news/global-food-retailer-moves-55000-employees-to-google-apps->

Figure 2B
Exports as a share of U.S. supply, selected products, 2010



Source: USDA, Economic Research Service, Fruit and Tree Nuts Yearbook, 2010.

Figure 3B
Imports as a share of U.S. consumption, selected products, 2010



Source: USDA, Economic Research Service, Fruit and Tree Nuts Yearbook, 2010.

averaging \$772 million and \$609 million, respectively, followed by oranges (\$463 million), strawberries (\$328 million), and cherries (\$294 million). Sales to Canada, Japan, and Mexico account for almost forty percent of all fresh fruit and nut exports, although their share of U.S. exports has declined in recent years. Sales to other TPP countries account for an additional 3 to 4 percent. Combined exports to

Table 1B: **Select fruit and nut exports, 2008-10 average**

Description	HS6	Exports <i>\$ million</i>
Fresh/chilled		
Apples	080810	772
Grapes	080610	609
Oranges	080510	463
Strawberries	081010	328
Cherries	080920	295
Grapefruit	080540	193
Dried fruit and juices		
Raisins	080620	304
Other orange juice	200919	244
Frozen orange juice	200911	139
Nuts		
Almonds, shelled and inshell	080212, 080211	2,000
Walnuts, shelled and inshell	080231, 080232	659
Pistachios, shelled and inshell	080250	572

Source: United Nations, Comtrade database.

Hong Kong, Korea, and China make up 17 percent, which reflects a four-fold increase in the value of exports to these countries from 2000 to 2010. Much of the Hong Kong sales may be transshipped to China. The increase in middle class consumers and the reduction of trade barriers resulting from the Korean liberalization under the Uruguay Round and China's accession to the WTO explains the dramatic rise in U.S. exports to these two heavily populated Asian countries.

Processed fruit, including juices and dried, account for the remainder of fruit export revenues. Major exports include frozen and other orange juice (\$383 million) and raisins (\$304 million). Orange juice exports increased about 50 percent in value between 2000 and 2010. Canada imports nearly 58 percent of U.S. orange juice and the other TPP countries an additional 4 percent. Australia and Malaysia purchases expanded rapidly from nearly zero to \$6 million. As for raisins, exports more than doubled between 2000 and 2010 with Japan, Canada, and Australia accounting for over 25 percent of the trade.

Tree nuts are 40 percent of the total value of U.S. edible fruit and nut exports. The United States trails only China in world production of tree nuts but is the world's largest exporter, trading nearly a third of the world's tree nuts. Almonds are especially important to the United States. By value, almonds are the leading U.S. horticultural export commodity (\$2.0 billion 2008-2010). Over the past 10 years, U.S. almond exports grew by 270 percent in value, with the United States currently accounting for nearly 75 percent of world almond exports in 2010. Other important tree nut exports include walnuts (\$659 million 2008-2010) and pistachios (\$572 million 2008-2010). Hong Kong and China import 17 percent of U.S. tree nut exports, followed by Canada (5 percent) and Korea (3 percent).

U.S. Fruit and Nut Imports – Over the past decade, U.S. edible fruit and nut (HS 08) imports rose dramatically in value to \$10.0 billion in 2010. This trend is due, in part, to the growing demand for offseason fruit, much of which enters at lower tariffs; the expanding ethnic population and curiosity about ethnic foods; and the interest among many Americans to sample new temperate and tropical fruits. Bananas and grapes are the two most important imports, valued at \$1.9 billion and \$1.3 billion, respectively, followed by avocados (\$671 million), pineapples (\$548 million) and cranberries/blueberries (\$379 million, 85 percent blueberries) (table 2B). U.S. consumer demand and the progressive relaxation of U.S. phytosanitary measures between 2001 and 2007 explain the over 2200 percent increase in avocado imports from Mexico. Similarly, U.S. imports of Chilean blueberries expanded by over 2,100 percent over the last decade, as Chilean growers have continued to respond to U.S. market opportunities.

Edible fruit and nuts from Mexico (grapes, avocados, mangos, strawberries and other berries, and watermelon) and Chile (grapes, blueberries, apples, and stone fruit) dominate U.S. fruit imports, with a combined share just shy of 50 percent of the total import value in 2010. The two countries, both of which have regional trade agreements with the United States, increased their imports in dollar value from \$1.8 billion in 2000 to \$4.7 billion in 2010). Mexico also captured a larger market share—28 percent in 2010 compared with 19 percent in 2000. U.S. imports from Vietnam, mainly cashews, increased approximately 575 percent allowing Vietnam’s share of the U.S. edible fruit and nut market to expand to nearly 4 percent (\$353 million).

Table 2B: **Select fruit and nut imports, 2008-10 average**

Description	HS6	Imports
		<i>\$ million</i>
Fresh/chilled		
Bananas	080300	1,903
Grapes	080610	1,282
Avocados	080440	671
Pineapples	080430	548
Cranberries/blueberries	081040	379
Other Melons	080719	285
Watermelons	080711	240
Lemons and Limes	080530	213
Strawberries	081010	169
Prepared fruit, juices, and nuts		
Cashews	080132	692
Apple juice	200970	499
Frozen orange juice	200911	352
Prepared pineapples	200820	344

Source: United Nations, Comtrade database.

Fresh fruit imports may compete with frozen or canned U.S. produced fruit. However, availability of high-quality perishable products, such as grapes and blueberries, in the offseason may increase the demand for U.S. produced fresh fruit or vegetables in season. According to the theory of habit formation, consumers may develop eating patterns dependent on consumption in a previous period. In their research, Ferrier and Zhen find that U.S. consumers do form habits consuming asparagus—eating asparagus in the fall months encourages consumers to purchase more in the spring months when U.S. production occurs. Stanton finds similar results in her study on U.S. consumption of U.S. grown grapes and offseason imports of Chilean grapes. The imports contribute to an increase in per capita sales of U.S. grapes. Another example may be blueberries, which in recent years the U.S. imports most heavily from December through February, mainly from Chile. U.S. per capita consumption of domestically produced blueberries has increased by around a half a pound over the last decade. Awareness of health benefits associated with blueberries and price likely are the primary motives for increased consumption, but year-round habit formation may be a contributing factor.

Improving Market Access Within the Trans-Pacific Partnership Region

For the United States, the TPP provides a framework for increasing market access in Brunei, Japan, Malaysia, New Zealand, and Vietnam, countries with which it does not currently have existing bilateral free trade agreements (table 3B). U.S. exports are levied the most-favored-nation (MFN) duty in these five countries and face a disadvantage against competitors that have already signed free trade agreements (FTAs) with these countries. The other six TPP countries (Australia, Canada, Chile, Mexico, Peru, and Singapore) already have FTAs with the United States, and, at this point, it is not clear whether the TPP negotiations would result in any increased market access between already existing FTA partners. In these countries the United States is likely to face increased competition from countries that would gain preferential access as a result of a TPP agreement.

Table 3B: **Already existing free trade agreements (FTAs) between TPP countries**

TPP Country	TPP Partners with which an FTA already exists
Australia	Brunei, Chile, Malaysia, New Zealand, Singapore, U.S., Vietnam
Brunei	Australia, Chile, Japan, Malaysia, New Zealand, Singapore, Vietnam
Canada	Chile, Mexico, Peru, U.S.
Chile	Australia, Brunei, Canada, Japan, Mexico, New Zealand, Peru, Singapore, U.S.
Japan	Brunei, Chile, Malaysia, Mexico, Peru, Singapore, Vietnam
Malaysia	Australia, Brunei, Japan, New Zealand, Singapore, Vietnam
Mexico	Canada, Chile, Japan, Peru, U.S.
New Zealand	Australia, Brunei, Chile, Malaysia, Singapore, Vietnam
Peru	Canada, Chile, Japan, Mexico, Singapore, U.S.
Singapore	Australia, Brunei, Chile, Japan, Malaysia, New Zealand, Peru, U.S., Vietnam
United States	Australia, Canada, Chile, Mexico, Peru, Singapore
Vietnam	Australia, Brunei, Japan, Malaysia, New Zealand, Singapore

TPP = Trans-Pacific Partnership.

Source: World Trade Organization regional trade agreements and preferential trade agreements (http://www.wto.org/english/tratop_e/region_e/rta_pta_e.htm)

Fruit and Nuts Markets with Greatest Expansion Potential – Thirty-two HS 06 level products were identified as holding the greatest export potential, based on the size of the overall market, the height of the MFN tariff, and the competitive position of the United States in our currently non-partnered TPP countries—Japan, Malaysia, New Zealand, and Vietnam⁵ (table 4B). Together these 32 products accounted for 62 percent of U.S. fruit and nut exports to these countries during 2008-10. The bulk of the remaining U.S. exports to these countries were levied low or zero tariffs so a TPP agreement would not be expected to result in much additional market access.

Total imports in each market is subdivided into four categories: (1) those from the United States; (2) from countries, including TPP countries, that already have an FTA with the importer; (3) from TPP countries that do not currently have an FTA with the importer; and (4) all other countries. The last three categories give an idea of the current and potential post-TPP competitive position of the United States. The larger the market share of current FTA partners plus non-TPP MFN partners and the larger the MFN tariff, the greater the potential of increased U.S. exports. The United States would be expected to gain market share from competitors now facing preferential rates as the United States began facing these lower rates. The United States would also be expected to gain market share from non-TPP countries that would continue to face the higher MFN rates. However, those gains would be shared with other TPP countries that do not currently have an FTA with the importer. The larger the market share of this group of countries, the less the potential gain in market share by U.S. exporters.

The United States is already the dominant supplier in many of these markets, including the Japanese markets for grapefruit, fresh cherries, fresh oranges, shelled walnuts, fresh strawberries, fresh raspberries, blackberries, and mulberries, and mandarins. The United States could be expected to maintain this position, but would probably not significantly increase market share. In these cases, gains would result from overall growth in trade rather than in trade diversion from one country to another. The larger the MFN tariff the greater potential for trade expansion, which bodes well for fresh citrus exports to Japan.

At the other end of the spectrum are the Japanese markets for grape juice; prepared/preserved cherries, strawberries, nuts, and citrus; frozen orange juice; and apple juice. The U.S. market share is currently small, the import market is dominated by FTA partners or other MFN countries, and average tariffs are in the double digits. The fresh apple market in Vietnam also shares these characteristics. Reducing or eliminating the margin of preference that FTA partners currently receive in these markets while exporting at preferential rates should allow U.S. exporters to grab market share from the competitors.

Other fairly large markets with double-digit MFN tariffs where the United States could also see export gains include those for grapefruit and other single fruit juices and mixtures, other berries, and fresh grapes in Japan and dried and fresh grapes in Vietnam. Whether the United States experiences future trade gains also depends on any changes or limitations related to sanitary and phytosanitary measures and other standards that trading partners may impose.

⁵ Import data for Brunei were not available.

Table 4B: Fresh and processed fruit and nut markets with the largest export potential in the TPP, 2008-10 totals

Product	Importer	Avg. applied tariff	Total imports	United States		All FTA partners		TPP MFN partners		Other MFN partners	
				\$1,000	Market share	\$1,000	Market share	\$1,000	Market share	\$1,000	Market share
Grapefruit	Japan	10.0	547,010	401,949	73.5%	265	0.0%	109	0.0%	144,686	26.5%
Cherries, fresh	Japan	8.5	245,472	241,998	98.6%	1,168	0.5%	2,306	0.9%	0	0.0%
Oranges, fresh/dried	Japan	24.0	323,410	224,218	69.3%	7,668	2.4%	73,857	22.8%	17,666	5.5%
Juice of any other single fruit or vegetable, including pear, prune, and tomato	Japan	17.0	472,048	175,861	37.3%	25,406	5.4%	117,938	25.0%	152,844	32.4%
	Vietnam	25.0	11,372	6,004	52.8%	3,102	27.3%	5	0.0%	2,262	19.9%
	New Zealand	6.1	20,405	3,505	17.2%	8,313	40.7%	1,114	5.5%	7,473	36.6%
Walnuts, shelled	Japan	10.0	194,913	182,062	93.4%	125	0.1%	14	0.0%	12,713	6.5%
Straw berries, fresh/chilled	Japan	6.0	91,043	80,832	88.8%	5	0.0%	0	0.0%	10,206	11.2%
All others, including berries, apples, grapes, mangoes, citrus, prep/pres	Japan	14.3	595,238	76,889	12.9%	187,364	31.5%	3,198	0.5%	327,788	55.1%
Grape juice (including grape must)	Japan	24.4	289,009	69,937	24.2%	44,424	15.4%	12,248	4.2%	162,399	56.2%
Fresh grapes	Japan	12.4	61,063	27,401	44.9%	32,778	53.7%	725	1.2%	158	0.3%
	Vietnam	10.0	72,161	22,378	31.0%	39,959	55.4%	6,761	9.4%	3,062	4.2%
	Malaysia	5.0	44,201	14,159	32.0%	12,578	28.5%	6,510	14.7%	10,953	24.8%
Mixtures of juices	New Zealand	6.3	42,684	26,554	62.2%	15,311	35.9%	26	0.1%	792	1.9%
	Malaysia	5.0	30,092	15,848	52.7%	7,993	26.6%	13	0.0%	6,238	20.7%
	Japan	18.5	56,842	15,102	26.6%	7,332	12.9%	5,878	10.3%	28,531	50.2%
Other berries, steamed/frozen	Japan	12.2	304,293	56,259	18.5%	56,305	18.5%	94,724	31.1%	97,006	31.9%
Grapefruit juice	Japan	24.4	127,443	51,933	40.7%	6,297	4.9%	3,653	2.9%	65,561	51.4%
Straw berries, steamed/frozen	Japan	10.8	134,086	42,416	31.6%	11,030	8.2%	93	0.1%	80,547	60.1%
Raspberries, blackberries, mulberries, fresh/chilled	Japan	6.0	34,019	32,777	96.4%	1,218	3.6%	18	0.1%	6	0.0%
Mandarins (including tangerines and clementines)	Japan	17.0	43,585	32,441	74.4%	1,019	2.3%	9,244	21.2%	881	2.0%
Apples, fresh	Malaysia	5.0	146,814	17,548	12.0%	67,723	46.1%	514	0.3%	61,030	41.6%
	Vietnam	10.0	75,827	12,581	16.6%	61,872	81.6%	1,039	1.4%	335	0.4%
Nuts and other seeds, prep/pres	Japan	10.8	335,283	29,250	8.7%	23,966	7.1%	10,594	3.2%	271,473	81.0%
Frozen orange juice	Japan	25.5	249,889	21,037	8.4%	25,895	10.4%	0	0.0%	202,957	81.2%
	New Zealand	6.1	32,932	3,185	9.7%	5,093	15.5%	0	0.0%	24,653	74.9%
Cranberries, bilberries and other fruits of the genus Vaccinium, fresh/chilled	Japan	6.0	51,226	19,708	38.5%	18,243	35.6%	10,250	20.0%	3,025	5.9%
Other melons	Japan	6.0	94,036	18,247	19.4%	68,050	72.4%	1,453	1.5%	6,286	6.7%
Dried grapes	Malaysia	5.0	17,950	9,887	55.1%	2,680	14.9%	0	0.0%	5,383	30.0%
	Vietnam	13.0	7,022	4,532	64.5%	2,353	33.5%	55	0.8%	82	1.2%
Apple juice	Japan	26.5	428,352	9,962	2.3%	22,356	5.2%	14,802	3.5%	381,232	89.0%
Citrus fruit, prep/pres	Japan	23.0	175,676	8,942	5.1%	3,124	1.8%	20	0.0%	163,589	93.1%
Other, including mixtures, prep/pres	New Zealand	7.0	26,082	3,946	15.1%	18,562	71.2%	0	0.0%	3,574	13.7%
	Japan	17.3	64,682	3,727	5.8%	20,662	31.9%	3,073	4.8%	37,221	57.5%
Cherries, prep/pres	Japan	13.5	26,981	7,316	27.1%	3,679	13.6%	0	0.0%	15,987	59.3%
Straw berries, prep/pres	Japan	14.8	30,535	6,461	21.2%	839	2.7%	55	0.2%	23,181	75.9%
Figs	Japan	6.0	19,098	5,994	31.4%	117	0.6%	0	0.0%	12,988	68.0%
Apricots, dried	Japan	9.0	12,437	5,687	45.7%	20	0.2%	0	0.0%	6,729	54.1%
Other nuts, fresh/dried	Japan	5.4	89,137	5,265	5.9%	5	0.0%	39,779	44.6%	44,087	49.5%
Raspberries, blackberries, mulberries, steamed/frozen	Japan	7.8	27,742	5,250	18.9%	6,001	21.6%	3,198	11.5%	13,293	47.9%
Juice of any other single citrus fruit	Japan	19.2	159,155	4,312	2.7%	873	0.5%	0	0.0%	153,970	96.7%
Tamarinds, other berries, fresh/chilled	Japan	5.5	17,425	4,005	23.0%	5,769	33.1%	902	5.2%	6,749	38.7%
All products and countries		12.3	5,828,669	2,007,362	34.4%	827,544	14.2%	424,167	7.3%	2,569,596	44.1%

prep/pres = Prepared or preserved.

Grape must = Freshly pressed grape juice, including skin, seeds, and stem.

Source: United Nations, Comtrade database.

Where Might U.S. Exporters Lose Market Share in FTA Partner Markets? – With the successful completion of a TPP agreement, the United States could begin facing increased competition in some product markets in those TPP countries where the United States currently enjoys a competitive advantage due to an FTA. This competition would come from other TPP countries that currently face higher MFN rates on their exports. In determining which markets may be most vulnerable to increased competition, this analysis is limited to only those U.S. products that competed with products from at least one non-FTA TPP country and those products where the MFN rate was greater than zero (table 5B). Fruit and nut exports to the six TPP countries with which the U.S. already has an FTA totaled \$10.0 billion during the 2008-10 period. About 35 percent of this trade was in products where the MFN tariff was duty free, so the United States did not enjoy a competitive advantage. Another 22 percent was in products that did not compete with TPP countries facing MFN rates and the MFN rates were relatively low (below 4 percent).

Singapore was excluded from the listing of six TPP countries with which the United States has an FTA because all of their fruit and nut imports enter duty free. Peru is also not found because they did not import fruits and nuts from any TPP countries that are not already FTA partners. Peru fruit and nut MFN tariffs are fairly high, averaging 20 percent, which might explain why no TPP countries were able to export at the MFN rate. Even among the four countries found in table 5B, very little was imported from TPP competitors at the MFN rate. With the signing of a TPP and the ability to export at preferential rates as the United States now does, this could change.

The most vulnerable products are likely to be those facing the highest tariffs, which include 13 products that the U.S. exports to Mexico (table 5B). The average applied MFN tariffs range from 22 to 27.4 percent for these products. The largest of these markets are for fresh apples and processed/preserved nuts, two markets that the United States currently dominates in Mexico. However, New Zealand has been able to export some apples and Vietnam some processed nuts, despite facing average tariffs of 23 percent. Should they acquire duty-free access in these markets, the United States could face more competition. U.S. exports of fresh kiwis to Mexico would also be vulnerable to increased competition from New Zealand.

Escalated competition from several Canadian products in the Australian market might also be expected. The most important being fruit juices, juice mixtures, and processed/preserved nuts. Australia and New Zealand would become more competitive in the Canadian market, with the most vulnerable U.S. exports being processed/preserved pears, apricots, and peaches; apple juice; fruit jams, jellies, and pastes; fresh plums, apricots, peaches, and cherries; frozen berries, and dried apples. The United States could also face increased competition from Malaysia and Vietnam in a few Chilean markets, although the export value is small.

Conclusion

The Trans-Pacific Partner countries imported nearly \$47 billion of horticultural products and exported \$40 billion in 2010. The United States comprises a major portion of that trade, 49 and 39 percent respectively. These numbers reflect at least a doubling of trade from a decade earlier. The United States signing of free trade

Table 5B: Fresh and processed fruit and nut markets vulnerable to increased competition in the TPP, 2008-10 totals

Importer	Product	Avg. applied tariff	Total imports		United States		TPP MFN partners		Main competitor(s)
			\$1,000	\$1,000	Market share	\$1,000	Market share		
Australia	Mixtures of juices	5.0	58,165.0	44,075.6	75.8%	963.9	1.7%	Japan, Mexico	
	All others, including berries, apples, grapes, mangoes, citrus, etc.	5.0	107,370.8	23,818.5	22.2%	7,378.3	6.9%	Canada, Japan, Mexico, Peru	
	Nuts and other seeds, prep/pres	5.0	45,372.7	22,901.6	50.5%	190.1	0.4%	Japan	
	Juice of any other single fruit or vegetable	5.0	86,260.8	17,723.0	20.5%	2,534.6	2.9%	Canada, Mexico, Peru	
	Frozen orange juice	5.0	136,646.7	10,167.3	7.4%	342.7	0.3%	Mexico	
	Cherries, prep/pres	5.0	10,540.6	5,312.3	50.4%	218.5	2.1%	Canada	
	Other fruit, dried	5.0	19,120.5	4,607.9	24.1%	336.9	1.8%	Canada	
	Other fruit jams, jellies, pastes	5.0	117,794.7	3,768.2	3.2%	1,049.8	0.9%	Canada, Mexico	
	Other orange juice	5.0	2,649.5	910.7	34.4%	49.1	1.9%	Canada	
	Grape juice (including grape must)	5.0	13,097.4	781.4	6.0%	97.3	0.7%	Canada	
	Apple juice	5.0	132,377.0	359.9	0.3%	13.2	0.0%	Canada	
	Mixtures of nuts or dried fruits, dried	5.0	9,890.7	346.6	3.5%	5.8	0.1%	Canada	
	Strawberries, steamed/frozen	4.0	18,320.7	342.2	1.9%	738.5	4.0%	Mexico, Peru	
Juice of any other single citrus fruit	2.5	27,446.3	1,461.2	5.3%	4,467.8	16.3%	Mexico		
Canada	Citrus fruit jams, pastes, marmalades	8.5	7,289.9	2,580.6	35.4%	4.4	0.1%	Japan	
	Pears, prep/pres	7.8	31,842.4	15,159.4	47.6%	2,269.6	7.1%	Australia, Japan, New Zealand	
	Apricots, prep/pres	7.8	5,415.0	2,592.2	47.9%	45.1	0.8%	Australia	
	Apple juice	7.0	214,523.4	51,081.4	23.8%	158.2	0.1%	New Zealand	
	Other fruit jams, jellies, pastes	7.0	106,581.8	43,887.9	41.2%	2,057.4	1.9%	Australia, New Zealand	
	Peaches, prep/pres	7.0	88,831.2	20,509.6	23.1%	1,087.3	1.2%	Australia	
	Plums and sloes, fresh	6.3	112,448.9	76,750.0	68.3%	181.2	0.2%	Australia, New Zealand	
	Apricots, fresh	6.2	28,808.1	25,188.7	87.4%	138.4	0.5%	Australia, New Zealand	
	Raspberries, blackberries, mulberries, steamed/frozen	6.0	84,540.9	30,009.7	35.5%	19.1	0.0%	New Zealand	
	Apples, dried	6.0	27,056.7	22,227.1	82.1%	18.6	0.1%	Australia	
	Strawberries, fresh/chilled	5.7	800,052.1	747,962.2	93.5%	574.4	0.1%	New Zealand	
	Peaches, including nectarines, fresh	5.4	241,724.1	193,432.0	80.0%	572.6	0.2%	Australia	
	Cherries, fresh	5.1	363,407.8	313,062.8	86.1%	231.3	0.1%	Australia, New Zealand	
Grape juice (including grape must)	4.8	212,310.9	107,971.1	50.9%	3,058.3	1.4%	Australia, New Zealand		
Pears and quinces	4.6	235,704.2	123,573.9	52.4%	8,565.3	3.6%	Australia, New Zealand		
Apples, fresh	4.3	531,464.5	399,308.3	75.1%	30,987.7	5.8%	New Zealand		
Chile	Other berries, steamed/frozen	6.0	12,999.9	2,196.1	16.9%	128.1	1.0%	Vietnam	
	Juice of any other single fruit or vegetable	6.0	7,302.4	1,819.4	24.9%	45.6	0.6%	Malaysia	
	All others, including berries, apples, grapes, mangoes, citrus, etc.	6.0	5,462.4	1,258.4	23.0%	43.6	0.8%	Malaysia	
	Other fruit jams, jellies, pastes	6.0	14,015.0	393.5	2.8%	22.5	0.2%	Malaysia	
Mexico	Other fruit jams, jellies, pastes	27.4	45,504.0	12,116.7	26.6%	42.5	0.1%	New Zealand	
	Apples, fresh	23.0	666,903.7	630,095.2	94.5%	1,197.1	0.2%	New Zealand	
	Nuts and other seeds, prep/pres	23.0	156,116.2	146,767.7	94.0%	94.9	0.1%	Vietnam	
	Peaches, prep/pres	23.0	171,739.5	33,911.4	19.7%	28.2	0.0%	Australia	
	All others, including berries, apples, grapes, mangoes, citrus, etc.	23.0	61,719.2	33,551.4	54.4%	13.8	0.0%	New Zealand, Vietnam	
	Juice of any other single fruit or vegetable	23.0	32,675.4	20,863.6	63.9%	208.6	0.6%	Australia, Malaysia	
	Other nuts, fresh/dried	23.0	19,427.1	16,286.3	83.8%	3.8	0.0%	Australia	
	Other, including mixtures, prep/pres	23.0	32,443.0	9,088.3	28.0%	51.8	0.2%	Australia, Vietnam	
	Pineapples, prep/pres	23.0	44,812.4	3,036.0	6.8%	340.4	0.8%	Vietnam	
	Apricots, prep/pres	23.0	3,905.3	2,071.9	53.1%	10.2	0.3%	Australia	
	Cashew nuts, shelled	23.0	9,793.3	551.1	5.6%	176.2	1.8%	Vietnam	
	Citrus fruit, prep/pres	23.0	1,959.3	467.1	23.8%	21.5	1.1%	Vietnam	
Kiwifruit, fresh/chilled	22.0	45,871.9	20,712.9	45.2%	9,769.4	21.3%	New Zealand		
All countries and products		10.5	5,210,705.3	3,248,060.6	62.3%	81,553.2	1.6%		

prep/pres = Prepared or preserved.

Grape must = Freshly pressed grape juice, including skin, seeds, and stem.

Source: United Nations, Comtrade database.

agreements with Canada, Mexico, Australia, Chile, Peru, and Singapore signified major progress in reducing barriers and spurring horticultural trade. However, average tariffs on fruits and vegetables remain quite high within several Trans-Pacific Partner countries. Simple applied average rates facing U.S. horticultural exporters are 20 percent to Japan, 13 percent to Malaysia, and 25 percent to Vietnam. Japan levies tariffs of 10 percent or more on oranges, grapefruits, grapes, walnuts, and various juices, most notably orange and grapefruit juices. Fresh and preserved cherries have tariffs of 8.5 and 13.5 percent. Phytosanitary restrictions add to the difficulties of entering some of these foreign markets.

The goals of TPP extend well beyond the agricultural sector. Reducing the economic distortions caused by tariff and nontariff barriers in many sectors help nations focus on producing the products that they have a comparative advantage. According to the Peterson Institute for Economics, TPP can generate annual global income gains of \$295 billion including a significant portion to the United States (Petri and Plummer). Increases in income combined with reductions in horticultural tariffs and more openness and transparent procedures for sanitary, phytosanitary, and other technical standards can generate increased demand and trade for U.S. fruit and vegetables.

References

Fergusson, Ian F. and Bruce Vaughn. “*The Trans-Pacific Partnership Agreement.*” Congressional Research Service, December 12, 2011.

Ferrier, P., and C. Zhen. “*Habit Effects and Producer Welfare in the Fresh Vegetable Trade,*” Paper presented at 2011 Annual Meeting of the Agricultural and Applied Economics Association, Pittsburgh, PA, August 24-26, 2011.

Office of the United States Trade Representative. *Report on Technical Barriers to Trade (TBT Report)*, March 2012.

Office of the United States Trade Representative. *Report on Sanitary and Phytosanitary Measures*, March 2012.

Office of the United States Trade Representative. “*Outlines of the Trans-Pacific Partnership Agreement,*” fact sheet <http://www.ustr.gov/about-us/press-office/fact-sheets/2011/november/outlines-trans-pacific-partnership-agreement>, November 2011.

Petri, Peter A. and Michael G. Plummer. *The Trans-Pacific Partnership and Asia-Pacific Integration: Policy Implications*, Peterson Institute for Economics Policy Brief No. PB12-16, June 2012.

Stanton, J. 2007. “Habits in Fresh Produce Consumption,” *Journal of Food Products Marketing* 13(1):1-18.



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Fruit and Tree Nuts Outlook

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1378>

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