United States Department of Agriculture

Economic Research Service

Situation and Outlook

VGS-357-SA2

Aug. 30, 2016

Vegetables and Pulses Outlook: Special Article

An Overview of Organic Vegetable Production in the United States[1,2]

Gustavo Ferreira, gustavo.ferreira@ers.usda.gov
Zachary Turk, Zachary.turk@yale.edu

Approved by the World Agricultural Outlook Board.

In 2014, the United States was the world's largest market for organic foods valued at $30.5 billion, followed by Germany ($8.9 billion), France ($5.4 billion), and China ($4.2 billion) (Willer and Lernoud, 2015). Also in 2011, the United States had 5.4 million acres of organic agricultural land, which accounted for a 0.6 percent total of its agricultural land (USDA-ERS, 2013). From 2008 to 2014 sales from organic farming in the United States grew an average of 12 percent annually, from $3.2 billion in 2008 to $5.5 billion in 2014. However, this growth did not occur evenly and has been driven mainly by organic vegetable and fruit production. These commodity groups are normally comprised of high value crops and their share of organic acreage to total acreage are the highest within the organic sector, according to data from the 2014 National Organic Producer Survey.

U.S. Organic Vegetable Production

The 2014 National Organic Producer Survey presents organic production data at the commodity level for the United States and by State. The data are grouped as field crops, vegetables, fruit & tree nuts, and livestock & animal products. For each commodity listed as a vegetable crop by USDA NASS, the organic percentage of its production relative to total production is derived in terms of harvested area (acres) and number of operations. The overall average percentage of organic vegetable production is 8.4 percent of total vegetable acreage and 16.2 percent in number of total operations. These shares are 3.1 and 3.6 times higher than for organic field crops. While field crops, and particularly grains, hold a large share of the American diet, they are still largely conventionally produced. Meanwhile, vegetable crops, a comparatively smaller part of diets in the United States, are more frequently produced as organic. As an example, spinach or celery both have small shares in the U.S. diet yet have a high organic share of total operations (table 1).

---

[1] Gustavo Ferreira is an economist with Market and Trade Economics Division, Economic Research Service, USDA.
[2] Zachary Turk is a former student intern with Market and Trade Economics Division, Economic Research Service, USDA.

Table 1--U.S. organic field grown vegetable production shares, 2014

Crop	Organic operations[1] (number)	Organic area harvested (acres)	Average operation size in crop (acres)	Organic operations as a % of 2012 U.S. total	Organic area as a % of 2012 U.S. total
Artichokes	61	--	--	36.5	--
Snap beans, fresh	843	1,525	2.0	4.1	1.6
Snap beans, processing	65	4,356	67.0	2.5	2.5
Broccoli	716	8,571	12.0	19.7	6.6
Cabbage[2]	1,099	2,275	2.1	22.5	3.1
Carrots	1,062	8,972	8.4	23.8	9.0
Cauliflower	316	1,745	5.5	23.8	4.1
Celery	190	2,235	11.8	38.9	6.9
Garlic	968	722	0.7	28.4	3.0
Herbs, fresh cut	574	3,050	5.3	25.5	33.7
Lettuce, all	1,063	32,122	30.2	18.5	9.9
Onions[3]	1,487	--	--	24.0	--
Peas, green	385	9,624	25.0	4.6	4.5
Peppers, bell	881	1,196	1.4	7.6	2.4
Potatoes	953	12,082	12.7	4.5	1.0
Spinach	411	18,000	43.8	25.8	38.8
Squash, all	1,347	6,826	5.1	9.6	11.7
Sweet corn	432	11,811	27.3	1.7	2.1
Sweet potatoes	302	6,005	19.9	13.7	4.8
Tomatoes, fresh	1,847	3,107	1.7	5.9	2.6
Tomatoes, processing	88	4,545	51.6	3.5	1.6
Vegetables, other	2,056	19,475	9.5	25.5	26.2

Source: 2014 National Organic Producer Survey, 2012 Census of Agriculture.

[1] Organic operations include certified and exempt organic farms. Exemption from certification requires $5,000 or less in organic sales annually.

[2] The 2014 Organic Survey breaks down organic cabbages into green, red and other. The 2012 Census of Agriculture classifies cabbages as Chinese or head. The totals from each source include all the aforementioned categories and were used to estimate the organic operation and area shares.

[3]The 2014 Organic Survey breaks down organic onions into dry, red (fresh), yellow (fresh), white (fresh), and yellow (processing). The 2012 Census of Agriculture classifies onions as dry. Total acreage of organic onions, average size of organic onion farms, and organic onion acreage as a share of total onion production area were not estimated because acreage data for organic white (fresh) and yellow (processing) onions is not disclosed in the 2014 Organic Survey. The totals from each source include all the aforementioned categories and were used to estimate the organic operations share.

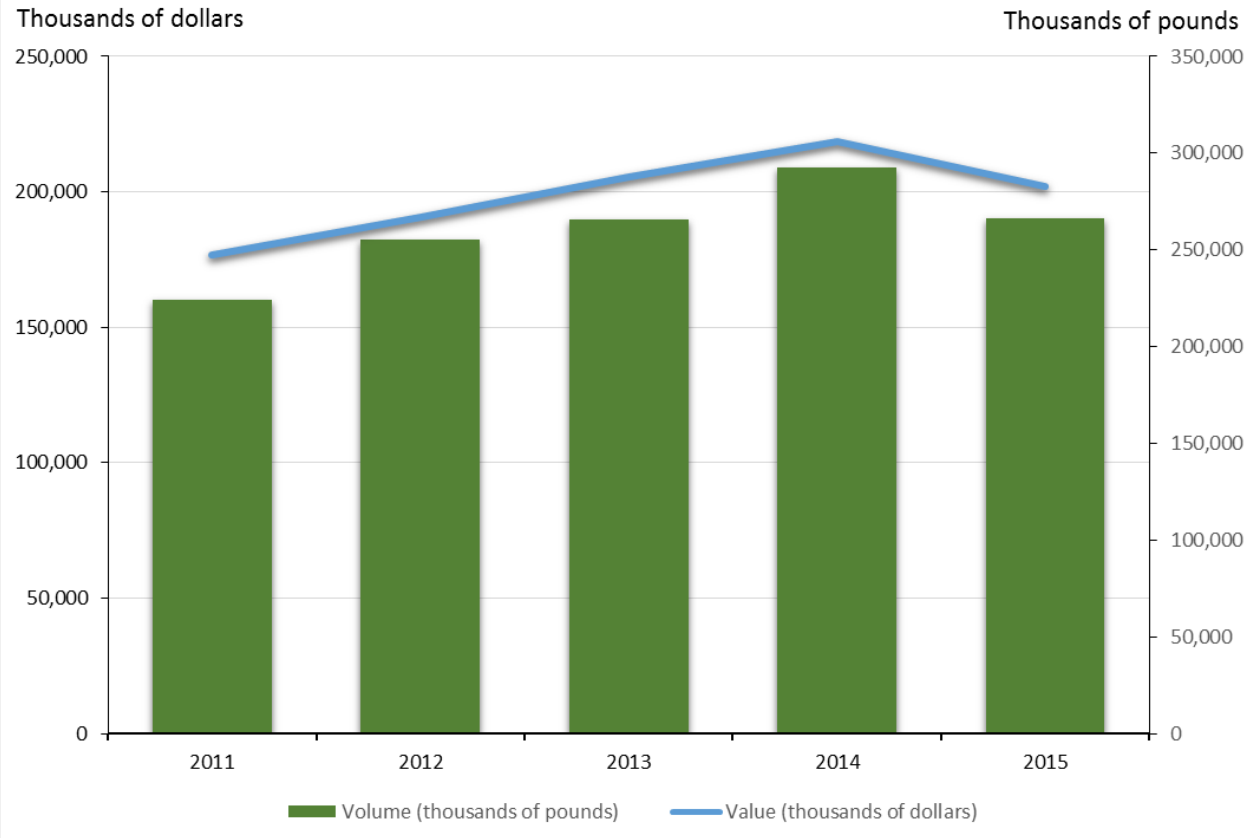
In 2014, fresh tomatoes, onions and squash had the largest number of U.S. organic operations with 1,847, 1,487 and 1,347 farms, respectively. Nevertheless, these operations are relatively small in size; less than 2 acres for tomato and 5 acres for squash producers. Organic production accounted for relatively small portions of total land and number of farms for these two commodities. Lettuce was the vegetable crop with the largest area allocated to organic production at 32,122 acres, and organic lettuce farms were among the larger ones in size averaging 30 acres. However, less than 10 percent of the total area used for lettuce production in the United States was under organic production methods in 2014 (table 1).

Spinach and fresh herbs are examples of commodities where organic production accounts for a significant share of total production area. Specifically, organic spinach accounted for almost 39 percent of total spinach acres in 2014. For fresh herbs, that share was close to 34 percent. On the other side of the spectrum, production of organic tomatoes for processing, sweet corn, potatoes and snap beans (fresh and processed) are characterized by smaller shares of total farms and acreage. Vegetables with larger shares of organic farms include celery (38.9 percent), artichokes (36.5 percent), and garlic (28.4 percent). These are followed by organic spinach and fresh herbs, with both exceeding a 25 percent share. It is important to note that production of organic artichokes is concentrated in only 61 farms (table 1).

Exports of Organic Vegetables

The Department of Commerce, Census Bureau currently collects data on 33 organic export products, most of which are fresh or chilled fruit and vegetables.[3] However, when the first data was tabulated on organic commodities back in 2011, there were just 23 items. Those ten added commodities included three vegetables (organic cabbage, beets, and peas). These products are categorized by what are called Harmonized Codes in the U.S. Census Bureau's Schedule B, which is the official statistical system for classifying about 8,000 U.S. commodities that are exported to the world. Data on the original 23 commodities shows that U.S. exports of organic vegetables increased slightly from January 2011 to December 2014 and then experienced a slight decrease in 2015. This was the case for exported value and volume (fig. 1). Canada and Mexico are the top export markets for most of the U.S. organic vegetables.

Figure 1
U.S. Exports of Organic Vegetables, 2011-2015



[3] The Census tracks the exports of the following 33 organic commodities: cabbage, cucumbers, grapefruit, pears, potatoes, cherry tomato, Roma plum tomato, tomato other, onion sets, cauliflower, broccoli, head lettuce, lettuce not head, carrots, celery, peppers, spinach, oranges, lemons, grapes, apples, cherries, strawberries, cult blueberries, coffee roast, tomato sauce (excluding Ketchup), beet, peas, asparagus, limes, watermelon, peach, and berries.

The importance of specific commodities relative to total tracked U.S. organic vegetable exports depends on whether value or volume is used as the ranking measure. In 2015, organic onions, carrots and cauliflower accounted for nearly 53 percent of the volume of organic vegetables exported. On the other hand, lettuce (not head), spinach and carrots were the top three commodities in terms of their share of the total value exported. Organic spinach and lettuce are examples of relatively low-volume but high-value organic exports, likely due to their perishability. For the 2011-2015 period, organic onions and head lettuce had the highest growth in export value with 356 percent and 151 percent increases, respectively. These increases have been driven by Mexico, which represented 99 percent of the export market for onions and 61 percent for head lettuce in 2015.

On the other hand, Roma plum and cherry tomatoes experienced the largest reductions in exports with 53 and 36 percent decreases, respectively. Once again, the decrease in organic tomato exports was the result of lower exports to its main market, Mexico. The export value of all other vegetables remained fairly stable and registered only small increases or decreases between 2011 and 2015.

Table 2--Ranking of U.S. organic vegetable exports by volume and value, 2015

Commodity	Export volume (thousands of pounds)	Organic vegetable exports as a share of U.S. total	Commodity	Export value (thousands of dollars)	Organic vegetable exports as a share of U.S. total
Onion Sets	52,877	19.9%	Lettuce Not Head	56,576	28.0%
Carrots	43,735	16.4%	Spinach	38,672	19.1%
Cauliflower	43,612	16.4%	Carrots	25,885	12.8%
Lettuce Not Head	34,384	12.9%	Cauliflower	21,036	10.4%
Celery	22,622	8.5%	Onion Sets	10,679	5.3%
Spinach	15,461	5.8%	Broccoli	10,672	5.3%
Broccoli	14,768	5.5%	Celery	9,647	4.8%
Potatoes	8,918	3.4%	Cherry Tomato	9,119	4.5%
Head Lettuce	8,601	3.2%	Tomato Other	8,028	4.0%
Tomato Other	7,431	2.8%	Peppers	3,812	1.9%
Cherry Tomato	5,531	2.1%	Head Lettuce	3,352	1.7%
Peppers	4,945	1.9%	Potatoes	2,133	1.1%
Roma Plum Tomato	3,021	1.1%	Roma Plum Tomato	2,038	1.0%
Asparagus	253	0.1%	Asparagus	539	0.3%

Source: Prepared by USDA, Economic Research Service using data from U.S. Department of Commerce, U.S. Census Bureau.

References

Greene, Catherine. 2013. Growth Patterns in the U.S. Organic Industry. Amber Waves. http://www.ers.usda.gov/amber-waves/2013-october/growth-patterns-in-the-us-organic-industry.aspx#.V7ylr5gdRaQ

Willer, H. and J. Lernoud. 2016. "Organic Agriculture Worldwide: Current Statistics," in *The World of Organic Agriculture: Statistics & Emerging Trends 2016*. The Research Institute of Organic Agriculture (FiBL), Switzerland, www.fibl.org