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Market Trends for US Berry Crops: Implications for Florida Blueberry, Blackberry, and Raspberry Producers[1]

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Overview of US Berry Market Trends

The US commercial blueberry industry value of utilized production was $1.1 billion on 102,400 acres in 2021, representing 26% of 2021 US berry crop value. In 2021, US blueberry growers harvested a total of 774.1 million pounds of blueberries, leading the world in total volume of blueberry production. In 2017 (the last year data were reported), blackberries were grown on 6,300 acres, mostly in Oregon, with a utilized production value of $31.3 million and more than 40 million pounds consumed either fresh or frozen in the United States. In the United States, raspberries (red and black) grown on 16,700 acres generated more than $432 million in value in 2019 (USDA 2022b).

In an unchanging trend since 1970, the US consumer continues to eat less than 40% of the recommended amounts of fruits and vegetables outlined in the 2020–2025 Federal Dietary Guidelines (USDA 2021b). Numerous consumer survey findings indicate that consumers will avoid repeat purchases of produce that expires too quickly under home storage conditions and reveal negative perceptions towards quality attributes (e.g., taste, color, degree of firmness/ripeness). This partially explains why only 12% of Americans met fruit intake requirements (Lee-Kwan et al. 2017). Market berry quality is highly dependent on careful harvesting, sorting, cooling, packaging, and shipping. The berry industry is characterized as labor-dependent and favors adoption of best management techniques to improve yields. There exists a need to better understand and address concerns, such as labor availability and costs, infrastructure investments, and alternative production and marketing practices to improve berry industry profitability.

The author presents production and market data specific to US blueberry, blackberry, and raspberry, with the intent to characterize related supply and demand trends recorded from 2000 to 2021. Implications from this market analysis are useful to inform production, harvest, and marketing decisions of Florida growers interested in, or involved with, the commercial berry industry.

Global Blueberry Markets

US Production

The lowbush species of blueberry, commonly referred to as a "wild" blueberry plant, is one of four fruit crops native to North America. The lowbush is a wild crop, although the plants are managed intensively. Maine is the leading producer of lowbush blueberries in the world. In 2021, a total of 104.9 million pounds of wild blueberries were utilized, and nearly all were sold for use in the processed market. The value of fresh and processed wild Maine blueberries was $80.3M, up significantly over 2020 values of $28.6M, driven by a more than twofold increase in yields and an increase in average prices from $0.60/lb to $0.77/lb (USDA 2022a).

Establishment of cultivated varieties uses two- or three-year-old bare root or container-grown plants. Highbush (northern and southern) and rabbiteye cultivars require milder growing conditions compared to lowbush plants, with both types thriving in well-drained, acidic soils and benefiting from irrigation and pruning. Highbush plants bloom later and produce a larger, juicier fruit with a thinner skin which ripens in early summer. Rabbiteye varieties are native to the southeastern United States and are the largest of the native blueberry plants, producing a slightly sweeter fruit with a tougher skin that can tolerate machine harvesting (Takeda et al. 2008).

Annual harvested US blueberry acreage has increased from 40,820 acres to 99,400 acres from 2000 to 2021 (Figure 1). In this same period, average blueberry yields increased from 4,480 pounds per acre to 6,730 pounds per acre, and the value of utilized production jumped from $177.8 million to $1.02 billion. Given larger numbers of acres and yield improvements, economic theory suggests decreases in grower prices received; however, analysis of grower prices from 2000–2021 revealed an upward trend for fresh blueberries and indicated demand was expanding. In 2001, grower price averaged $1.29/lb nationally for fresh berries, rising to $2.14/lb in 2007. This encouraged new and existing growers to plant several thousand additional acres. As these new plantings reached maturity from 2010–2021, average grower price initially dropped down

to $1.86/lb in 2010, but reached $2.16/lb in 2021. It has remained at this price point for three years. This price recovery was not evident in average grower prices received for processed blueberries. While processed blueberry prices initially doubled from 2000–2007, increasing from $0.73/lb to $1.54/lb, by 2009 these prices dropped to $0.45/lb and recovered to $0.83/lb in 2021 (Figure 1). Despite this price disparity, just over half (55%) of cultivated blueberries grown in the United States were sold as fresh product in 2021 (USDA 2022b).

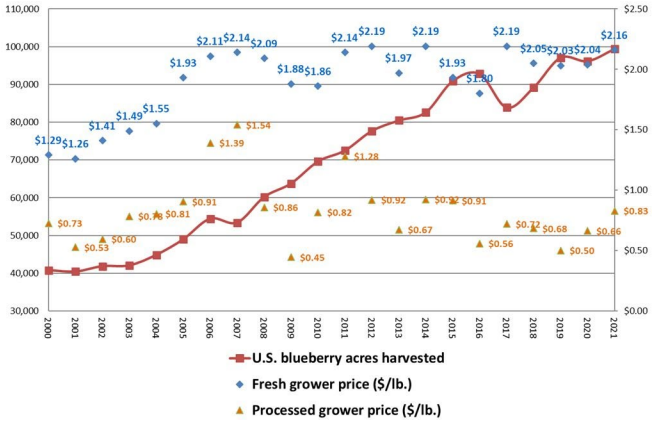


Figure 1. Annual harvested US blueberry acreage (number of acres), fresh and processed grower prices received ($/lb), 2000–2021.
Credit: USDA (2022c)

In 2021, Michigan growers harvested blueberries valued at $82.5M from 16,200 acres (USDA 2022b). Washington and Oregon operations represent another 35% of US blueberry holdings, at 20,200 acres and 14,500 acres, respectively. Farm-gate values are more than double, at $228.4M and $171.7M, for Washington and Oregon, respectively, compared to Michigan. This disparity is captured in yield variabilities between the two regions, with Michigan yields at 4,500 lb/acre compared to 8,910 lb/acre in Washington and 10,400 lb/acre in Oregon. Seasonal supply peaks explain why grower prices received are relatively lower compared to Southern-grown blueberries, ranging from $1.14/lb to $1.27/lb across all three states in 2021. Marketing strategies differ between regions as well, where the majority of blueberries grown in northern climes are machine-harvested (with relatively lower costs of production) and sent for processing while southern blueberries are hand-harvested and sold into fresh market channels.

Georgia, North Carolina, and Florida were among the top eight producing states, with 20,600 acres, 7,400 acres, and 5,700 acres harvested, respectively, representing one-third of all US blueberry acreage in 2022 (USDA 2022b). Most of these southeastern-grown blueberries are sold to the fresh market during the early-season window of March through June. The 2022 average farm gate value for these three states was $236.1M, or 23.1% of the overall US average farm gate value for cultivated blueberries. While yields are relatively lower compared to those of northern growing states, ranging from 4,200 lb/acre to 4,820 lb/acre, grower prices are relatively higher, from $1.26/lb in Georgia to $3.03/lb in Florida.

Imports/Exports

The United States is a net importer of fresh and frozen blueberries. Overall, US fresh cultivated blueberry imports increased tenfold from 46.5 million to 571.3 million pounds from 2002 to 2021. In 2022, Peru, Mexico, and Chile provided 244.8M (43%), 139.1M (24%), and 122.7M (22%) pounds, respectively. In 2021, total imported fresh cultivated blueberries were valued at $1.59 billion, a significant increase over 2017 import values of $841 million (USDA 2022d). Imported blueberries are available to US markets as early as November through January, providing a source of fresh fruit to the consumer before domestic production is harvested in southeastern states. In 2021, the US exported 49.3 million lb of fresh cultivated blueberries valued at $115.4M and 70.2 million lb of frozen blueberries valued at $86.2M (USDA 2022d), primarily to Canada, South Korea, and Japan.

US Consumer Demand

In 2000, the North American Blueberry Council (NABC) voted to establish a Blueberry Order, a federally mandated marketing and promotion order. The Blueberry Order program established a grower assessment program which is administered by the US Highbush Blueberry Council (USHBC). The USHBC members voted to impose an assessment rate of $18/ton in 2012, raising the rate from an initial level of $12/ton that was established in 2000 (Kaiser 2020). Resulting funds were invested in medical research trials which have documented the health benefits associated with blueberry consumption and motivated the promotional messaging to inspire consumers to “Grab a Boost of Blue” (USHBC 2021). Combined with consumer marketing expenditures, the USHBC efforts appear successful as measured by impressive increases in US blueberry utilization. Fresh blueberry consumption rose from 79.1 million lb to 373 million lb from 2000 to 2019, while processed consumption rose from 103.8 million lb to 300 million lb over the same time (USDA 2021b). Kaiser (2020) estimated the average increase in net revenue due to a 1% increase in promotional spending by the USHBC is $978,300 per year. He noted that an additional one dollar spent on promotional efforts would generate $18.74 in returns to blueberry growers, indicating the program benefits are worth more than 18 times the cost.

Rising consumption of cultivated blueberries prompted a flurry of new plantings, with acreage increases from 71,075 acres in 2005 to 112,100 acres in 2021. Most of the new plantings occurred in the western region (i.e., Washington, Oregon, and California), which recorded a 76% increase from their 2005 harvested acreage of 9,000

acres to 38,100 acres in 2021. Georgia, North Carolina, and Florida also increased plantings, with harvested blueberry acreage increasing from 6,000 acres to 20,600 acres, 3,600 acres to 7,400 acres, and 1,500 acres to 5,700 acres, respectively, by 2021 (USDA 2022b). National per capita availability (a proxy for consumption) of blueberries rose from 0.24 lb in 2000 to 2.1 lb per person in 2021 (USDA 2021b). Given this 21+ year record of success, the blueberry industry voted to continue the National Research and Promotion Program on November 8, 2021 (USDA 2021a).

Global Blackberry Markets

With ideal growing conditions for blackberries and raspberries in the Pacific Northwest, Oregon leads the nation in cultivated blackberry production. Since 2007, harvested acreage has ranged from 6,100 acres to 7,500 acres, with yields varying from 5,820 lb/acre to 8,790 lb/acre. While grower prices for fresh blackberries are historically 2–3 times higher than processed prices, most of the utilized production landed in the processed market. In 2017, reported volumes indicated that 37.15 million lb went to processing and just over 3 million lb were marketed fresh (USDA-NASS discontinued reporting on blackberry volumes to protect grower identities).

US imported blackberry data reveal an inverse in the percentages sold by product form, with 221 million lb of fresh blackberries and another 38 million lb of frozen blackberries imported to the United States in 2020. Mexico dominated fresh imported volumes, representing 216 million lb, or 98%, while Chile and Serbia were the primary countries of origin for processed blackberry volumes, with 19.7 million lb and 10.2 million lb, respectively (USDA 2021b).

Global Raspberry Markets

In the US, red and black raspberries are cultivated in California, Oregon, and Washington, where harvested acreage was 8,550, 1,700, and 9,710, respectively, in 2017. Red raspberry yields ranged from 4,250 lb/acre to 17,100 lb/acre, and black raspberry yields from 2,180 lb/acre to 6,370 lb/acre.

Grower prices received averaged $1.91/pound, with a utilized production value totaling $432.4 million in 2019 (USDA 2021b). About 132 million lb of raspberries were sold to fresh markets, and another 94,380 lb were processed in 2019. Fresh grower prices received were $2.90/lb while processed prices were $0.54/lb that year, a 50% reduction compared to 2017 prices received of $1.10/lb.

The US imported 194.1 million lb of fresh raspberries in 2017 valued at $658.8 million, nearly all produced in Mexico, and another 46 million lb frozen valued at $58.5 million, which were grown in Chile, Serbia, Mexico, and Canada (USDA 2021b).

Implications for Florida Blueberry, Blackberry, and Raspberry Producers

As evidenced by the improved US demand for blueberries, coordinated research and promotion efforts have proven successful drivers of industry profitability. Growers are encouraged to inform production decisions based on historical market trends and current price movements, with the goals of producing to market specifications and building in swift targeted responses to anticipated consumer demand shifts. Produce buyers possess the market data metrics and timely analytics while growers are capable of manipulating inputs and varietal choices. The authors suggest future research investigate the potential for adoption of a grow-on-demand approach built on shared data analysis between producers and retailers that may allow the industry to capture added revenues and provide higher-quality fresh berries to consumers.

As a result of continued labor supply limitations and trade challenges (USITC 2021), the blueberry industry faces pressure to move towards mechanized harvesting. The increasingly larger volumes of fresh blueberries imported into the US are evidence that relatively lower costs incurred by growers in importing countries, coupled with substantial government subsidization in Mexico, fuel trade advantages in US consumer markets (Wu and Guan 2021). While machine harvesting represents a solution to the continuing farm labor shortage facing US growers, the opportunity cost of adopting technology must be weighed against potential lost revenues, given that mechanical harvesting can cause damage to berries destined for the fresh market and that 2020 prices received for processed blueberries were just 32% of fresh grower prices received in 2020. Historically, mechanical harvesting of blueberries was limited to rabbiteye varieties that were more tolerant of machine handling, or late-season fruit that were destined for the processing market.

Fresh fruit in general, and berries in particular, are intolerant of inconsistent shipping and handling practices. They generally cannot be stored for long compared to most other produce. Given ongoing worldwide transportation snags and other supply chain disruptions, investment in early and late varietal plantings and high tunnel production technologies offers growers the opportunity to improve overall profitability by targeting the fresh market windows of November through March, when grower prices received are upwards of four times higher than in the summer months. This trend presents a competitive advantage to growers who offer relatively fresher fruit that has traveled fewer hours between farm gate and fork. Investment in season manipulation techniques (achieved

by moving away from field crops into protected culture) has proven profitable in Mexican blueberry production (Wu and Guan 2021). Florida berry growers are advised to conduct enterprise risk evaluations of both open-field and protected culture, such as high tunnels.

Changing household and consumer shopping trends are reflected in the individual who selects fresh berries for at-home consumption. Driven by pandemic lockdown conditions, online grocery shopping grew from $62.2B to $95.8B in just one year. By 2024, it is predicted to exceed $187B, led by Amazon and Walmart. The food and beverage retail e-commerce revenue in the US boomed from $9B in 2017 to $18.7B in 2020 and was expected to grow to nearly $26B in 2021 (Blazquez 2021). The individual selecting the fresh produce to place in the shopping basket is not the end user and oftentimes not a berry consumer themselves, given that 43% of consumers reported eating blueberries (Shahbandeh 2021). As indicated by these trends, a differentiated approach to marketing of fresh berries may prove fruitful. For example, at the retail level, provide shopper educational messaging at point-of-purchase as to how to properly identify and select product quality. Additionally, growers may consider investment in logistics to prioritize delivery of premium berries where quality control measures are ensured to gain direct access to markets aimed at shortening the time frame from field to consumer. Growers able to provide households with access to fruit that is harvested, sourced, and available to purchase in relatively fewer days compared to imported supplies may gain access to households who are attempting to increase fresh fruit intake to improve overall health.

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