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Blueberries Increasing Their Global Presence

Innovation in the Industry Will Boost Opportunities

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Summary

The blueberry industry is becoming truly global, with fast-growing supply and/or demand in most continents. Per capita availability is set to continue an upward trend in the US, the EU-27+UK, China, and other markets, driven by continued production expansion. Competition on the global playing field is increasing, with Peru marching on and Mexico and a few other up-and-coming exporters expanding shipments. Going forward, industry trends include: the probability of declining unit prices for Peruvian exports, stagnation in Chilean production, and an increase in substrate-grown berries in Mexico. As the blueberry industry faces increasing input costs, labor issues, and logistical challenges, companies are pushed to become more productive and efficient, and to consistently provide high-quality fruit. The adoption of improved cultivars and technologies such as the use of substrates, protected culture, and mechanical harvesting will help growers solve a number of supply-side challenges.

Consumption Expanding Globally

Blueberry Availability Expected To Show Upward Trends in Key Markets

As stated in previous reports,¹ the blueberry industry has undergone a significant transformation, with the market shifting from regional to multi-regional to global. Consistent availability and potentially decreasing prices will drive per capita consumption not only in the US, but also in the UK, the EU-27, China, and other markets.

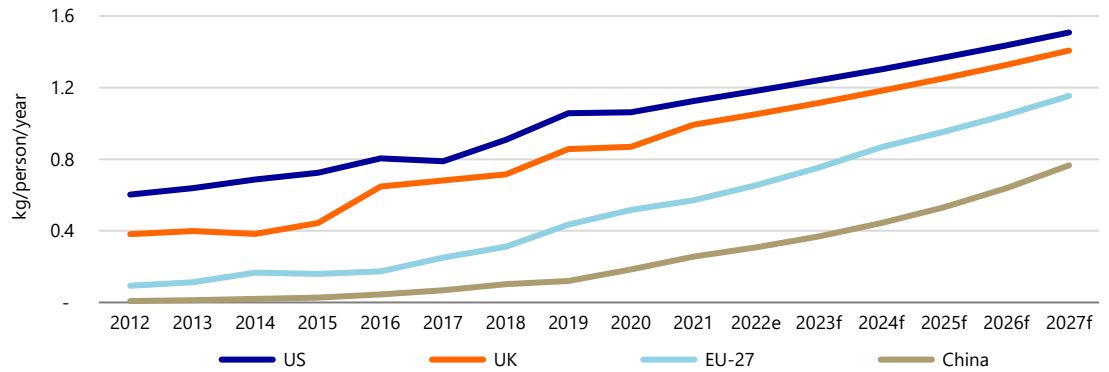
We expect the upward trend in blueberry consumption to continue in the coming seasons (see *Figure 1*). In the next five years, per capita availability in the US is likely to surpass 1.5kg per person per year, while per capita availability in the EU-27 and China is expected to show a cumulative growth of about 100% and 200%, respectively, by 2027 compared to 2021 levels.

Availability in the global market will largely depend on production expansion in key producing countries, such as Peru, South Africa, China, and Morocco, among others. We expect that in the short run, despite inflationary, recessionary, and logistical challenges, the US, the EU-27, and the UK will remain the most important destination markets. Availability of blueberries in China will rely heavily on domestic production growth.

¹ [Newcomers Reshaping the US Fresh Blueberry Market: What to Expect in 2019/20 and Beyond](#) (September 2019), [Flattening Blueberry Prices Shift Industry Paradigm: Adjust Your Strategy](#) (September 2020), [Consistent Quality Is the New Blue: A Look Into the Future of the Blueberry Market](#) (September 2021), [Five Berry Important Topics](#) (November 2021).

In the longer run, as these challenges subside, blueberry demand is expected to continue to grow. Industry sources estimate that household penetration in the US will increase from about 50% in 2021 to roughly 66% by the end of the current decade, potentially reaching 75% by 2035, outpacing strawberries. In addition, the industry will increase efforts to develop new markets to advance in its goal of making blueberries the world's favorite fruit.

Figure 1: Per capita availability of fresh blueberries in selected markets, 2012-2027f



Source: Trade Map, USDA, Rabobank estimates 2022

Blueberries are perceived as a 'super fruit' with a hard-to-match combination of product attributes, including healthful characteristics, outstanding convenience, and attractive flavor. According to various research publications, blueberries stand out for their antioxidant capacity.

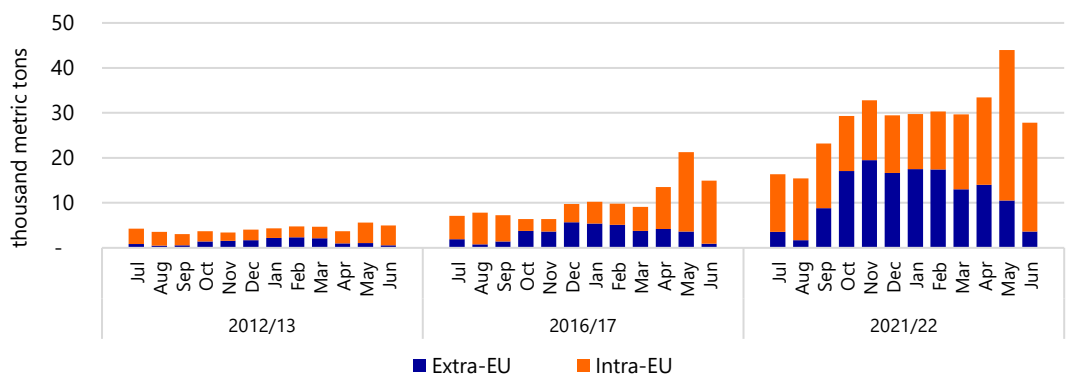
Blueberry consumption has been growing fast in recent years in many regions around the globe. In terms of future growth prospects, it is worth noting that overall fruit consumption has been growing marginally in developed markets. Therefore, the increase in blueberry consumption may come at the expense of flat to declining consumption of some fruits that lack some of the desirable traits consumers seek.

Rising EU and UK Imports Despite Logistics Issues

EU and UK blueberry imports have grown sixfold in the past ten seasons. Higher production in more diverse growing regions has helped ensure year-round supply and led to increased availability on the European market. At the same time, positive media coverage of blueberries' nutritional value and beneficial health properties has spurred European consumers, resulting in expanding consumption.

Between July and May of the 2021/22 season, total EU-27 blueberry imports reached 341,000 metric tons. Supplies arriving mainly from Peru, Morocco, and South Africa have helped to extend the extra-EU season. The most active period of intra-EU shipments is May, at the peak of the Spanish and Moroccan seasons (see Figure 2).

Figure 2: EU-27 monthly blueberry imports, 2012/13, 2016/17, and 2021/22 seasons



Source: Eurostat, Rabobank 2022

As shown in a [previous report](#), blueberry consumption in Europe has increased over the past decade, but still lags behind the leading countries (US and Canada). Although a change toward bigger packaging sizes has been observed in Germany, which could contribute to increased consumption in subsequent seasons, pressure on retail prices cannot be ruled out.

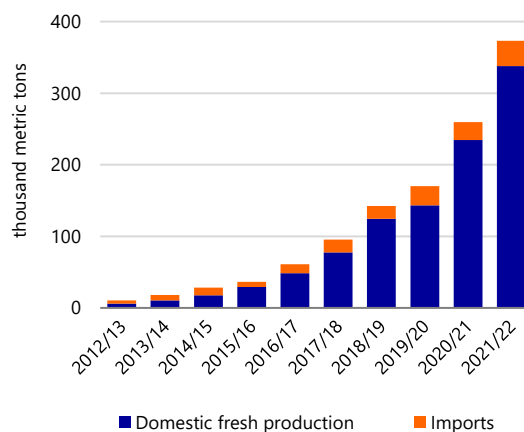
Logistics pressure remains. This was one of the main factors that led to quality-issue claims for Southern Hemisphere blueberries at wholesale markets in Europe in 2021/22. The global schedule reliability index remains low (40.5% in July 2022), but higher than in 2021, with the South America–Mediterranean trade route presenting the best index according to [DHL](#). In addition, Sea-Intelligence stated that the unbalance between demand and capacity experienced during 2020 and 2021 is moving toward normalization, which has been reflected in the drop of freight rate indices. However, the shortage of truck drivers is still significant and may affect the development of the 2022/23 season in Europe.

China: The Giant Is Waking Up

Blueberry availability in the Chinese market has increased 36-fold over the past decade (*see Figure 3*). The beneficial health properties combined with the convenience of this fruit have led to increasing imports as well as significant growth in domestic production, which mostly goes unnoticed due to the lack of readily available information.

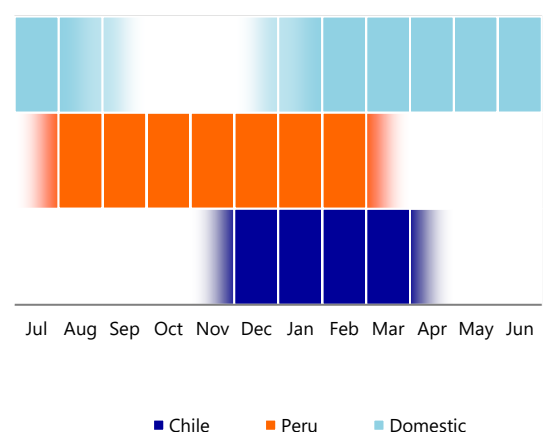
As diverse as the country itself, the different production zones are spread across China, covering almost ten months of the year, leaving a gap between September and December that is mainly covered by Peruvian and Chilean supplies (*see Figure 4*). As a result, Peruvian blueberry exports to China increased from 6,000 to 27,000 metric tons between 2016/17 and 2021/22. On the other hand, Chilean blueberries face strong competition from both early domestic production that enters the market in late February, and also from sweet cherries that traditionally draw the interest of Chinese consumers around the Chinese New Year celebrations.

Figure 3: Blueberry availability in China



Source: Li, Trade Map, Rabobank 2022

Figure 4: Seasonality in the Chinese market



Source: Liu, Rabobank 2022

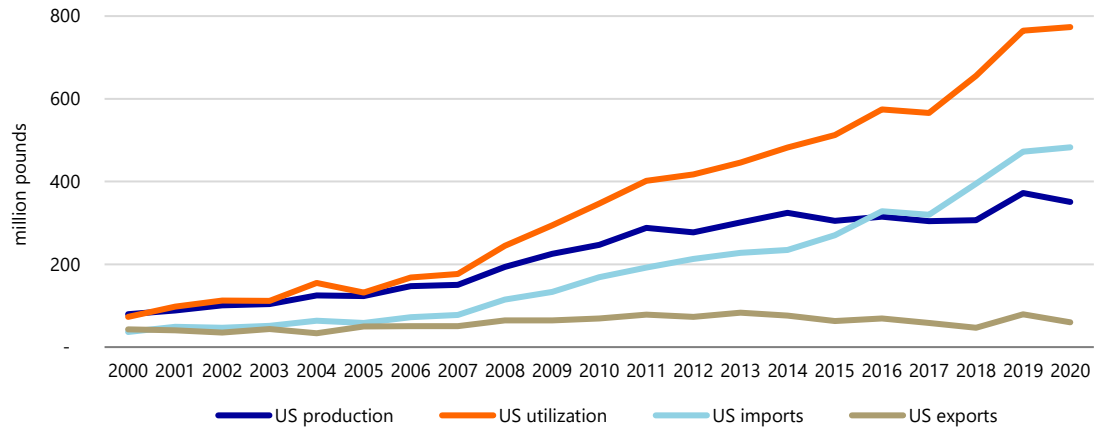
Due to the opportunity of rising consumption and increasing domestic supply in China, Chile and Peru face major challenges in terms of quality and variety renewal. Currently, almost all imported blueberries arrive by sea, with transit times of 25 to 35+ days for Chile and Peru. Early trials with new proprietary varieties show [promising results](#) with better organoleptic properties and extended shelf life, which could strengthen the presence of both suppliers in the Chinese market.

North American Market Remains Crucial

Fast-growing Availability of Fresh Blueberries in the US

While fresh blueberry production in the US has grown at a compound annual growth rate (CAGR) of 3% over the past ten years and at a rate of 7% over the past 20 years, availability in the US market has expanded at CAGRs of 9% and 11%, respectively (see Figure 5). Since 2016, US imports have consistently outpaced US domestic production as the industry has focused on providing reliable year-round availability to US consumers. On the other hand, US exports have remained flat or declining. Going forward, US blueberry imports will continue to grow during the US off-season, potentially setting new records every year for the next few seasons.

Figure 5: US fresh blueberry market fundamentals, 2000-2020



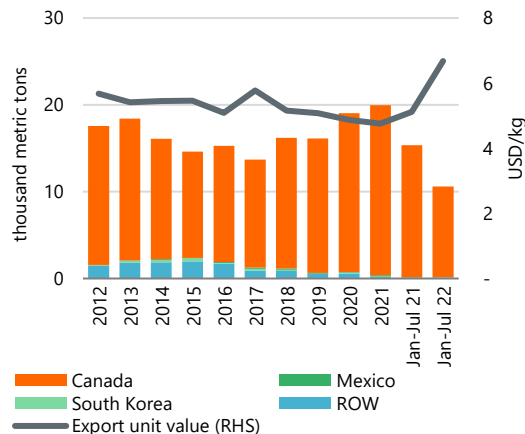
Source: USDA ERS, Rabobank 2022

Increasingly Negative US Trade Balance for Non-organic Blueberries

In 2021, exports of non-organic fresh highbush blueberries from the US were 14% higher than in 2012, showing an increasing concentration of shipments with Canada as their market destination. Over the past decade, other markets importing US produce included Mexico, South Korea, Taiwan, Japan, Singapore, and Hong Kong.

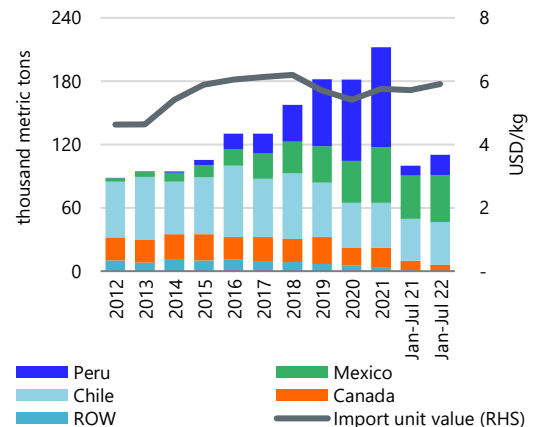
In the first seven months of 2022, US exports of this category were down 31% YOY. A late start of the harvest season in the Pacific Northwest, due to a cold spring that delayed fruit development, a strong US dollar, and logistical challenges are some of the reasons for the drop in US exports year-to-date. The lower volumes exported caused a significant price uptick in 2022 (see Figure 6).

Figure 6: US exports of conventionally-grown fresh highbush blueberries, 2012-2022



Source: USDA FAS, Rabobank 2022

Figure 7: US imports of conventionally-grown fresh highbush blueberries, 2012-2022



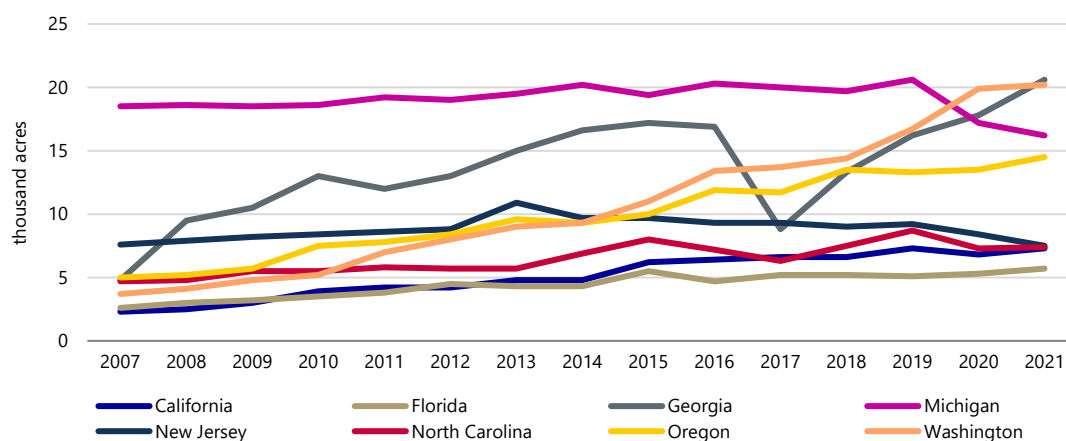
Source: USDA FAS, Rabobank 2022

On the other hand, US imports of non-organic fresh blueberries increased 140% between 2012 and 2021. The share of US imports from Peru increased from 0.02% in 2012 to 45% in 2021. During the January-July period of 2022, US imports increased 10% YOY as the Peruvian season has been starting earlier every year. Also, 2021 marked the first calendar year that Mexico displaced Chile as the second largest supplier of non-organic blueberries to the US market (see Figure 7). US imports from Argentina and Uruguay have dropped significantly in recent years as these countries face increased competition in the international market. The average annual unit value of US imports appears to have stabilized as supplies have increased during the shoulders of the season, when prices were the highest.

More Acreage in Southeastern and Northwestern US States

Harvested acreage in selected US states has almost doubled over the past 15 years. According to USDA figures, harvested area in Washington and Georgia has grown fivefold and fourfold, respectively, to over 20,000 acres in both states. Moreover, most states show a positive trend in harvested acreage (see Figure 8).

Figure 8: Harvested highbush blueberry acreage in selected US states, 2007-2021



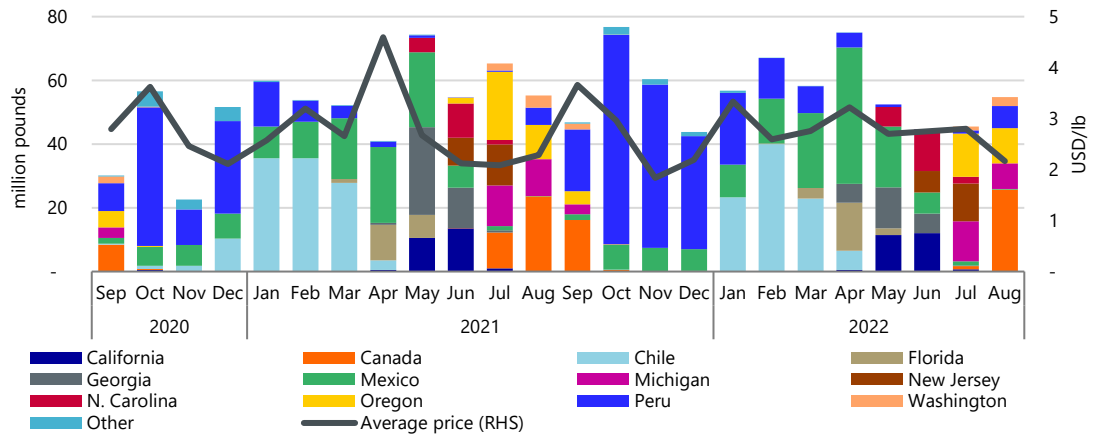
Source: USDA NASS, Rabobank 2022

Average yields of tame blueberries vary significantly by state, from 5,000 to 6,000 pounds per acre to 10,000 to 11,000 pounds per acre, according to government statistics. In the future, yields are expected to increase as growers in some regions adopt not only higher-yielding cultivars but also new techniques, such as planting in grow bags or pots, and using netting covers.

Non-organic Arrivals and Shipping-point Price Trends

Availability of non-organic fresh blueberries continues to increase during the October-November and March-April periods. However, monthly shipments in December 2021-January 2022 were down year-on-year as logistic bottlenecks delayed imports. Also, availability was down year-on-year in June-July 2022, partly due to weather conditions delaying harvest in key US regions. During these months, prices were up year-on-year, showing a fast response to lower supplies (see Figure 9).

Figure 9: Arrivals and shipping-point prices for conventionally-grown blueberries in the US, 2020-2022



Source: USDA AMS, Rabobank 2022

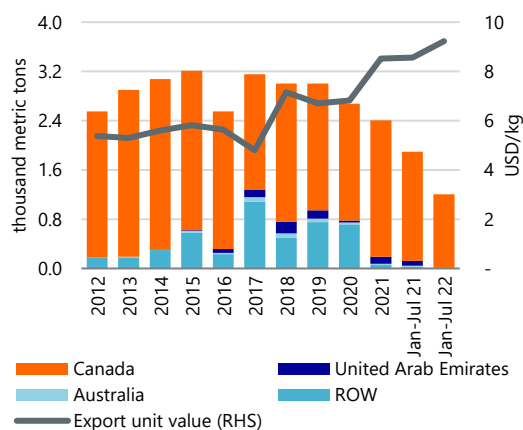
Organic Blueberries Capture Market Share in the US

In recent years, organic blueberries have accounted for about 12% of US fresh blueberry exports. Trends and challenges in the organic sector are similar to those described above for non-organic blueberry exports from the US (see Figure 10).

On the import side, organic blueberries accounted for only 1% of US blueberry imports in 2012, but this share had increased to 16% in 2021. US organic imports have grown exponentially, particularly from Peru and Mexico (see Figure 11). The fact that the unit value of US imports has maintained an upward trend despite increased volumes shows that demand for organic blueberries will continue to grow through mid-2022.

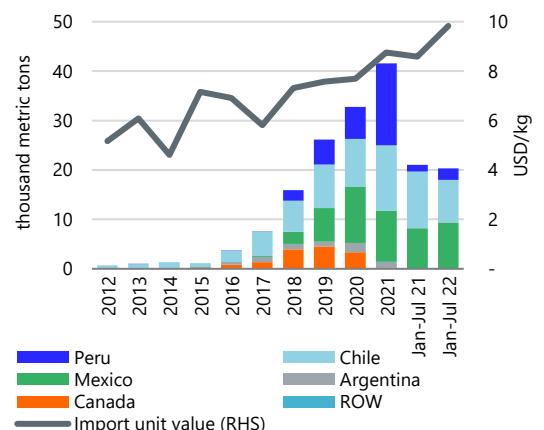
In the first half of 2022, unit import prices were considerably higher year-on-year, while import volumes remained at levels similar to the previous year's. This shows that organic blueberry prices have been impacted by inflationary pressure and, at the same time, suggests that demand for organic blueberries has seemingly stayed firm.

Figure 10: US exports of organic fresh highbush blueberries, 2012-July 2022



Source: USDA FAS, Rabobank 2022

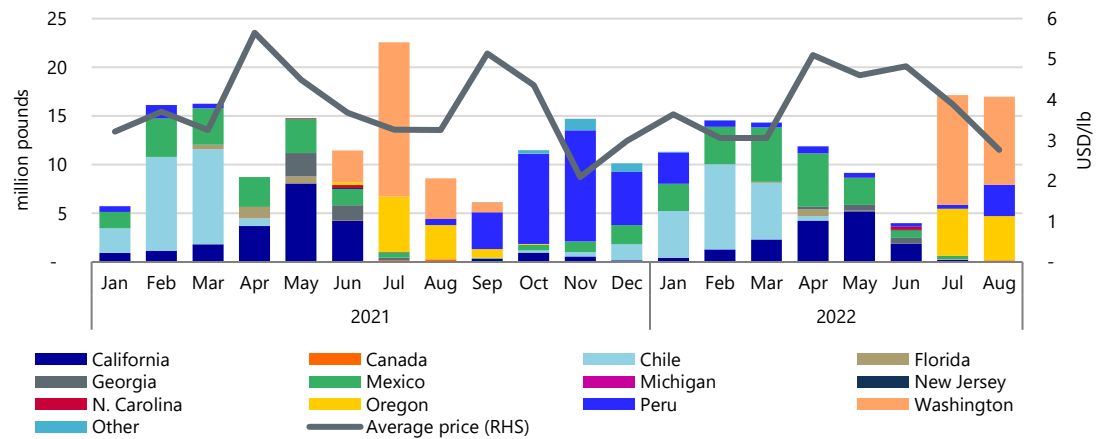
Figure 11: US imports of organic fresh highbush blueberries, 2012-July 2022



Source: USDA FAS, Rabobank 2022

Looking at the seasonal behavior of organic supplies and prices in the US, it is worth noting that prices in April and September tend to be higher than the annual average. California, Chile, Mexico, Oregon, Peru, and Washington are among the growing regions with a relevant seasonal share of organic shipments to the US market (see Figure 12).

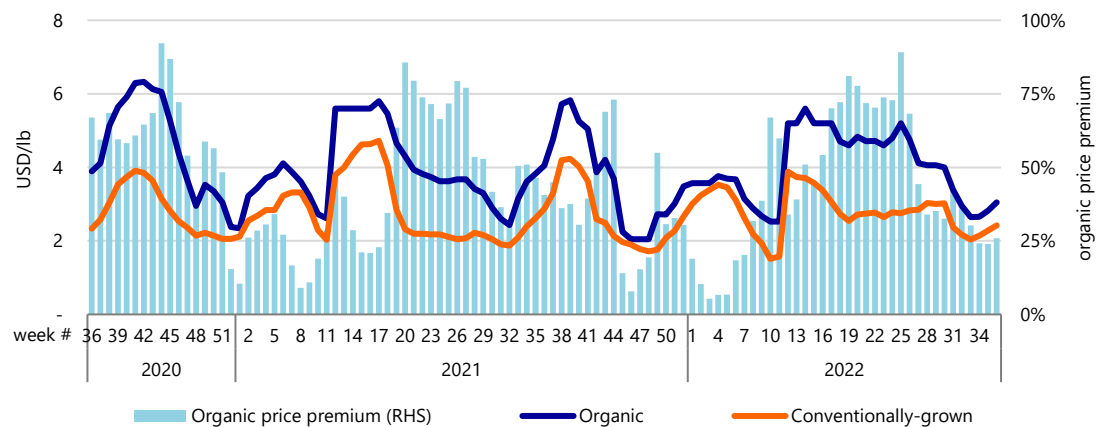
Figure 12: Arrivals and shipping-point prices for organic blueberries in the US, 2021-2022



Source: USDA AMS, Rabobank 2022

As a summary of organic trends in the US market, we present a chart of weekly organic price premiums. Although organic prices are highly susceptible to weather shocks, higher organic price premiums are typically found from week 18 to 19 through week 27 to 28 (see Figure 13). This period includes peak production seasons in Central California, Georgia, and North Carolina, the past-peak season in Florida and Mexico, and the start of the season in Oregon and Washington. Obviously, the incentives to transition to organic production depend on local growing conditions, the cost increase associated with organic production (which can significantly vary from one region to another), the price level during harvest season, and organic price premiums.

Figure 13: Shipping-point weekly prices and organic price premiums in the US, 2020-2022



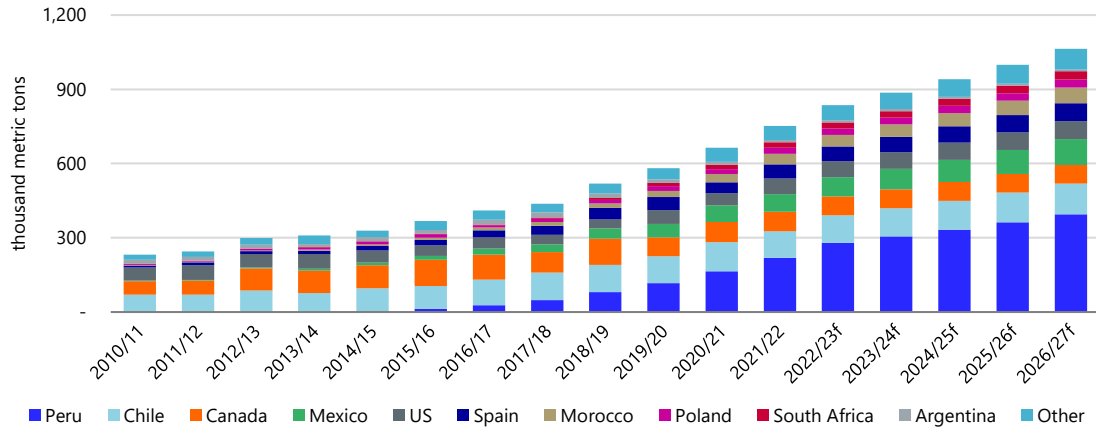
Source: USDA AMS, Rabobank 2022

Exports Will Continue To Expand

Record-setting Exports Likely Every Year in the Near Future

We updated our estimates for global fresh blueberry exports based on recent industry data from key exporting regions. We expect global blueberry exports to surpass 1m metric tons as early as 2025/26. Exports from Peru have significant growth potential, while exports from Mexico and South Africa will also show sustained growth. Exports from Chile, Canada, and the US are likely to stabilize (see Figure 14). In the following paragraphs we provide observations on the industry outlook for Peru, Chile, and Mexico.

Figure 14: Fresh blueberry exports by country of origin, 2010/11-2026/27f

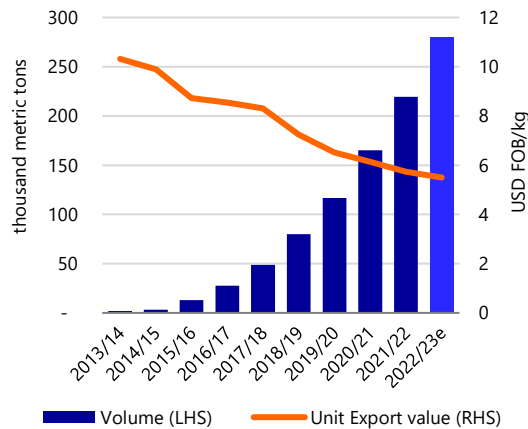


Note: Re-exports excluded.
Source: Trade Map, Proarándanos, Rabobank 2022

Peru: Is the Sky the Limit?

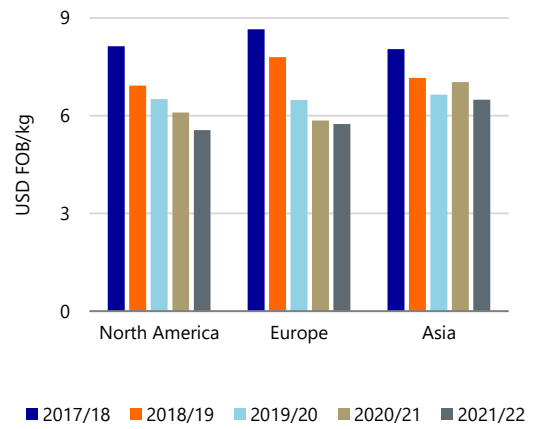
Peru will strengthen its position as the global leader in blueberry exports in the 2022/23 season, expecting to reach 280,000 metric tons, according to Proarándanos (see Figure 15). The 2021/22 season presented logistical challenges, which added to the increasing export volume that pushed down unit export values to all destination markets (see Figure 16). Besides the impressive growth rate of Peruvian blueberry exports over the past few seasons, there is still untapped growth for the coming years as new plantings enter the productive stage. We might see the first signs of slower growth in exports in the medium term (three to five years out), due to potentially less investment in new plantations.

Figure 15: Peruvian blueberry exports and unit export value, 2013/14–2022/23e



Source: MIDAGRI, Rabobank 2022

Figure 16: Peruvian blueberry unit export value by market, 2017/18–2021/22



Source: MIDAGRI, Rabobank 2022

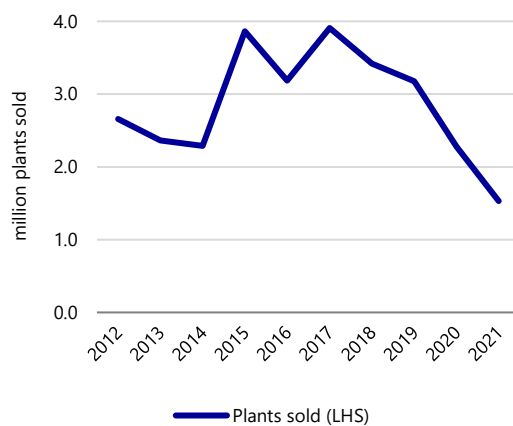
On both the production and market level, Peruvian blueberry producers are facing challenges. On the production side, these include increasing costs (inputs, labor, and logistics) and the need for better yields. On the market side, challenges include declining export prices, tighter market windows, stricter quality and condition requirements from retail, and higher consumer expectations in terms of taste and texture. These factors have prompted Peru’s main blueberry producers to introduce new proprietary varieties. Although Peruvian blueberry production is currently still focused on two main cultivars, we will see growth in exports of new varieties in the coming seasons.

Is the Blueberry Market Cooling Down in Chile?

Blueberries were one of Chile's most exported fruits in the past decade, but their exports have stalled recently, ranking fourth in terms of export value in the past season. Planted area increased by 4,000 hectares in ten years' time, while exports of fresh blueberries rose 23%, reaching a maximum of 117,000 metric tons in the 2020/21 season. Currently, production in Chile is growing more slowly as planting has stabilized over the past five years and is mostly to replace old orchards and obsolete varieties.

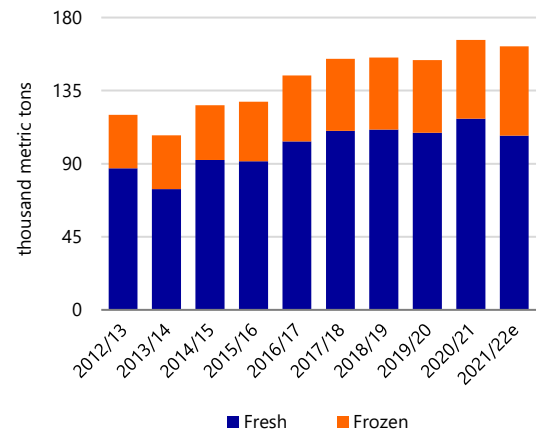
For the coming seasons we can expect even slower growth rates, as sales of blueberry plants in Chile in 2021 reached the lowest figure in at least 11 years (see Figure 17). In addition, the Chilean blueberry industry has been dealing with strong competition from Peru, Mexico, Spain, Morocco, and the domestic Chinese supply in the corresponding markets. Besides, tight labor availability and logistic constraints in the past three seasons have resulted in a reconfiguration of Chilean blueberry exports, such as greater exports of frozen fruit. Between 2012 and 2021, frozen blueberries represented 29% of shipments. In 2022, they are expected to account for 55,000 metric tons and 34% of total Chilean blueberry exports.

Figure 17: Blueberry plants sold in Chile



Source: AGVF, Rabobank 2022

Figure 18: Chilean blueberry exports by type



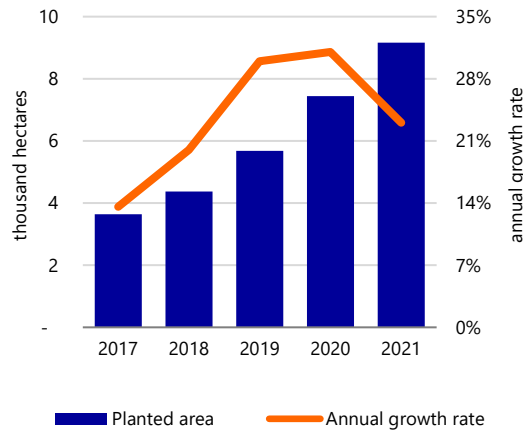
Source: ODEPA, Rabobank 2022

One of the key factors that determined the results of the past season was logistics. Longer transit times and delays in all parts of the supply chain affected the quality of Chilean blueberries in the main destination markets. To reduce transit times to the US, the Chilean blueberry industry launched the [blueberry express](#) charter service that will operate in the 2022/23 season. Similar to the cherry express service for the Chinese market, the blueberry express will help keep the transit time of much of Chile's blueberry supply under two weeks, which will help to maintain quality and improve sales prices.

Mexico: The Future of the Industry Lies in Protected Pots and Bags

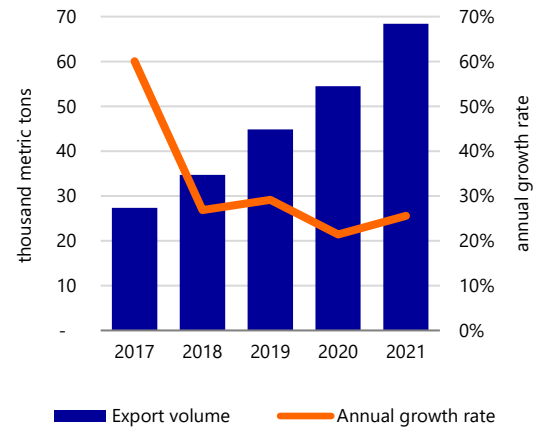
According to industry estimates, close to 60% of blueberry planted area in Mexico is in substrate, either in bags or pots, while the remaining 40% is still planted directly in the soil. In terms of protected culture, an astonishing 85% of the area is covered with plastic or mesh in the form of high tunnels or nets, with only 15% of the area remaining open field. Also, about 13% of the blueberry area in Mexico is organic.

Figure 19: Planted area of blueberries in Mexico, 2017-2021



Source: Aneberries 2022

Figure 20: Blueberry export volume from Mexico, 2017-2021



Source: Aneberries 2022

An important distinction of blueberry production in Mexico is that most growers are small family farms. The average size of a farm is around four to five hectares, and many farmers rely on family labor. The integration of small farmers into a successful exporting supply chain has created positive social impact and economic spillover associated with blueberry production. In the market, the societal impact could be a differentiator for Mexican blueberries.

There are also some larger operators in Mexico that produce and export blueberries. Moreover, multinational players will increase their operations in Mexico to exploit the competitive advantages in terms of weather, which allows year-round growing of blueberries, and its proximity to the US market, which allows for the supply of fruit of competitive quality and freshness. In the next few years, the growth in the industry will come from this segment of operators and, given the challenges in terms of input costs and labor, some consolidation is expected.

Innovation Must Gain Ground

As the industry transitions toward increased resiliency and sustainability, new cultivars will be key for the industry to become more input efficient and meet higher consumer expectations. Some believe that the golden age in fruit genetics is just starting. The use of technology and improved technical knowledge in breeding will continue to lead to blueberry cultivars with attractive agronomic traits as well as attributes that offer consumers an enhanced eating experience.

There is no single variety that works for everybody. Since replacing varieties with subpar performance (including those that fail to adapt to specific conditions) is costly, variety developers will continue to diversify the growing regions in which they operate to reduce the learning curve for adapting and adopting new varieties with specific traits tailored to the conditions in the target growing region.

Elevated costs of fertilizers, ag chemicals, and other inputs, will continue to drive more input-efficient, higher-yielding, higher-quality fruit cultivars – in short, better genetics. Fruit genetics has been a very active segment recently, with several M&A transactions around the world, and some vertically integrated players investing in their own breeding programs to generate proprietary fruit varieties.

As labor will remain a challenge in the industry, mechanical harvesting and automation will ramp up. Breeders will focus on developing cultivars that require fewer harvest passes and are more conducive to mechanical harvesting.

While flavor may not be one-taste-fits-all, as some consumers prefer sweet blueberries and others prefer a tart flavor, all seem to enjoy a crunchy, firm blueberry. Cultivars with an extended shelf life, that travel well, are also desirable, as blueberries face steeper competition in the fruit aisle due to the year-round availability strategy in the fresh produce industry.

Generic packaging needs to be replaced to offer the differentiation needed for companies to pursue premium pricing for premium fruit. Generic promotion by the industry will continue boosting demand. Standard quality blueberries, marketed in association with discount retailers, have the potential to extend the category in a segment with currently low penetration and high potential for growth.

Imprint

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