



Rabobank

Strawberry Plantings on the Rise

Intending To Keep Up With Increased US Demand

RaboResearch

Food & Agribusiness
far.rabobank.com

David Magaña

Senior Analyst – Fresh Produce

Gonzalo Salinas

Senior Analyst – Fresh Produce

Summary

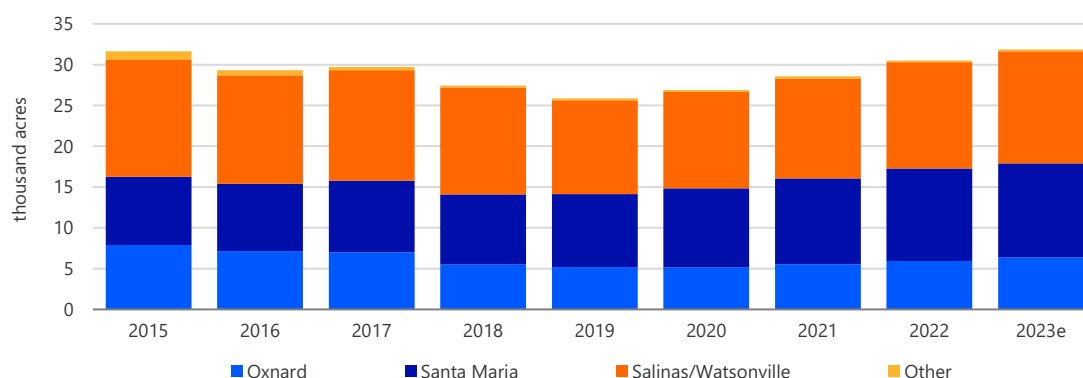
Strawberries enjoy one of the highest household penetration levels in the US among fresh fruits and the highest per capita consumption in the berry patch, both in fresh and frozen markets. As demand continues to grow steadily, planted area in California is expanding. Record shipments are likely in 2023, but weather remains the usual wild card, particularly this season, as growing areas in California have been impacted by record rainfall. While the fresh market remains mainly a regional North American story, US imports of frozen strawberries from South America are changing the landscape. With the availability and consumption of all berries expanding, interesting market opportunities arise.

Planted Acreage in California Continues Increasing

The farmgate value of US strawberry production has surpassed USD 3bn annually in the fresh market and more than USD 300m in the processing market, per USDA figures. Prices that growers receive for fresh market strawberries are typically two to three times those of strawberries for the processing market, depending on market conditions.

Per industry sources, acreage in California will continue increasing in 2023 to meet steadily expanding demand. "Total California acreage for 2023 is expected to produce record levels needed to supply higher consumption and demand, with enhanced supply from May through September 2023," according to the California Strawberry Commission.

Figure 1: Fall planted acres for winter, spring, and summer strawberry production in California, 2015-2023e

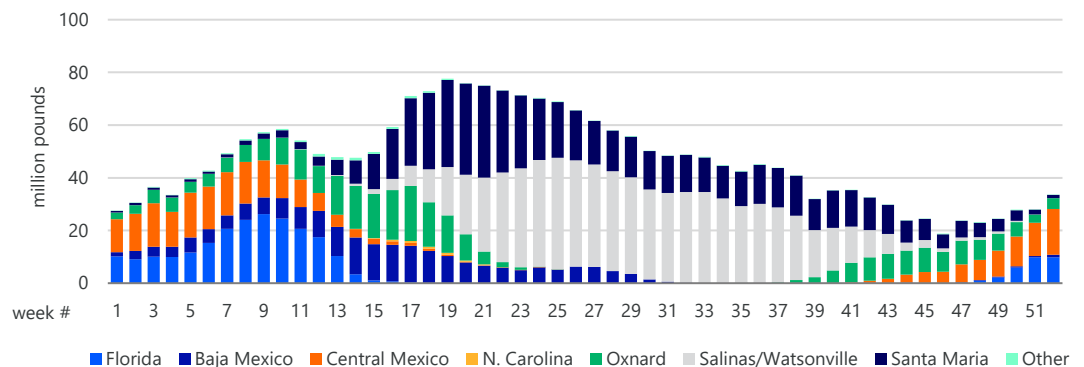


Source: California Strawberry Commission, Rabobank 2023

Fall planted acres in California increased roughly 4% YOY to 31,852 acres, the highest level in almost a decade (since 2014). While fall plantings in Oxnard and Salinas/Watsonville increased 7% and 6% YOY, respectively, fall plantings in Santa Maria set a new record of just over 11,500 acres (see Figure 1). Planted area in Santa Maria for the current season is up 40% compared to the fall planted area for the 2016 season. A driver behind this trend is the extended growing season in Santa Maria. As for California summer plantings for fall production, the strawberry commission will publish updated information by August. Industry estimates for strawberry planted area in Florida and Mexico show annual increases of about 10%, supporting the outlook for likely record availability in 2023.

Weekly availability of fresh strawberries in the US typically peaks around week 20, when harvest in Santa Maria is in full swing, the Salinas/Watsonville harvest is ramping up, and the season in Oxnard is wrapping up. The lowest availability is around week 46, with shipments from central Mexico, Oxnard, and Santa Maria, just before the start of the Florida season (see Figure 2).

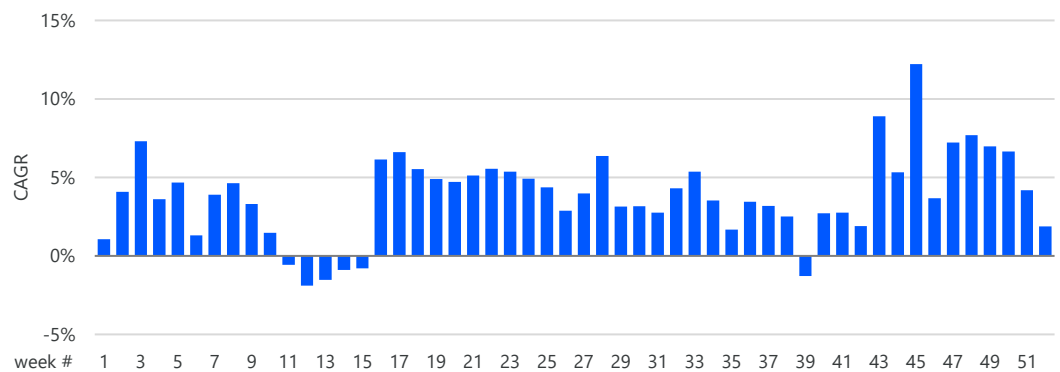
Figure 2: Average weekly fresh strawberry arrivals in the US market, 2020-2022



Source: USDA, Rabobank 2023

Factors such as acreage dynamics in key growing regions, coupled with variations in average yields due to improved varieties planted, have led to higher fresh strawberry availability in most weeks of the year in the US market. From the 2015-2017 period to the 2020-2022 period, weekly availability increased in 46 of the 52 weeks of the year. Exceptions to this trend were weeks 11 to 15 during the spring transition period, when supply gaps due to weather shocks are more likely, and week 39, when production was severely impacted by a heat wave in California in 2022 (see Figure 3).

Figure 3: Dynamics in weekly fresh strawberry arrivals in the US, 2015-2017 vs. 2020-2022



Source: USDA, Rabobank 2023

US Strawberry Market Fundamentals in Perspective

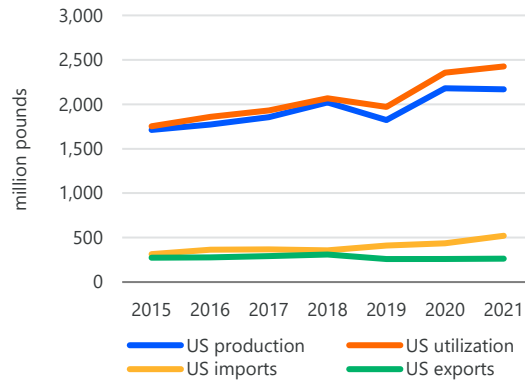
Increasing Per Capita Availability

Per the California Strawberry Commission: “Despite inflationary pressures, kids and adults report strawberries as their favorite fruit, with US household penetration increasing to nearly 71%.” Other industry sources show that strawberry household penetration is similar to that of bananas and apples, placing strawberries as one of the fruits with the highest household penetration in the US.

US fresh strawberry utilization has increased faster than US domestic production. From 2016 to 2021, US fresh strawberry production increased a cumulative 22%, while US utilization increased 30% during the same period (see Figure 4). In other words, imports increased 43% in the aforementioned half decade. However, the import-to-utilization ratio has remained around 20% for the past decade.

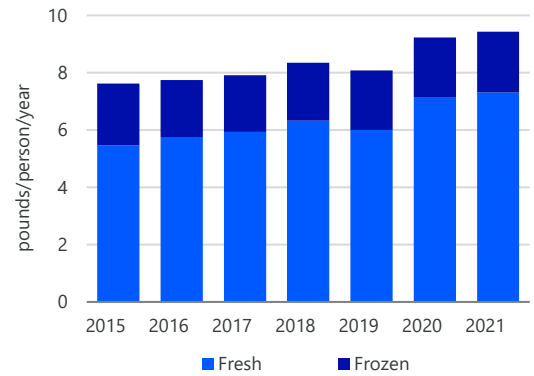
Per capita availability of fresh strawberries has steadily increased during the past few years and currently surpasses 7lb, according to USDA figures. This consumption volume is higher than that of all other berries combined. On the other hand, availability of frozen strawberries has remained relatively stable at just over 2lb per person per year (see Figure 5). Strawberry per capita availability will remain elevated in the next few years.

Figure 4: US fresh strawberry market fundamentals, 2015-2021



Source: USDA, Rabobank 2023

Figure 5: US strawberry per capita availability, 2015-2021

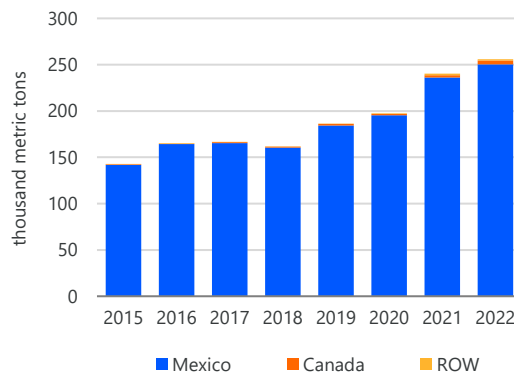


Source: USDA, Rabobank 2023

US Fresh Strawberry Trade, Mostly a North American Regional Story

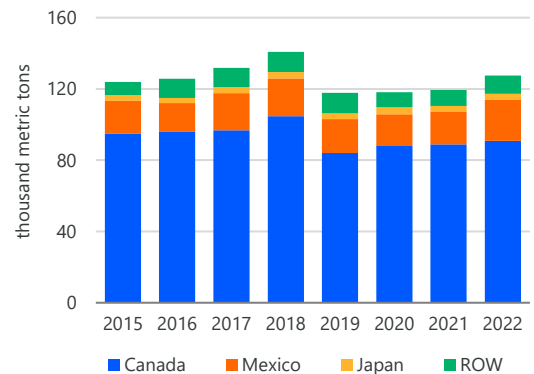
Increased fresh strawberry availability is not only the result of expanding production, but also of an increasingly negative US trade balance. While US fresh strawberry imports have increased and surpassed 250,000 metric tons, US fresh strawberry exports have stalled at around 120,000 metric tons (see Figures 6 and 7). Given the short shelf life of strawberries, US trade continues to be limited to neighboring countries, with Mexico as the leading origin of US imports and Canada the primary destination of US exports.

Figure 6: US fresh strawberry imports, 2015-2022



Source: USDA, Rabobank 2023

Figure 7: US fresh strawberry exports, 2015-2022



Source: USDA, Rabobank 2023

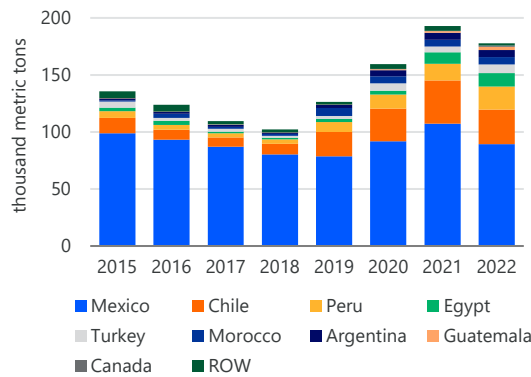
About 11% of annual US fresh strawberry exports go to countries other than Canada and Mexico. Japan is the largest destination market among these, with Saudi Arabia, the UAE, Kuwait, Thailand, Singapore, and Hong Kong as other markets. Improved logistics in 2023, along with the use of postharvest solutions to extend shelf life, will offer the possibility to expand US exports to markets beyond North America.

The Changing Composition of US Frozen Strawberry Imports

US imports of frozen strawberries from Mexico have remained relatively stable over the past few years, whereas US imports from other origins, particularly from Chile and Peru, have substantially increased (see Figure 8). Increasing frozen fruit exports from South America are not exclusive to

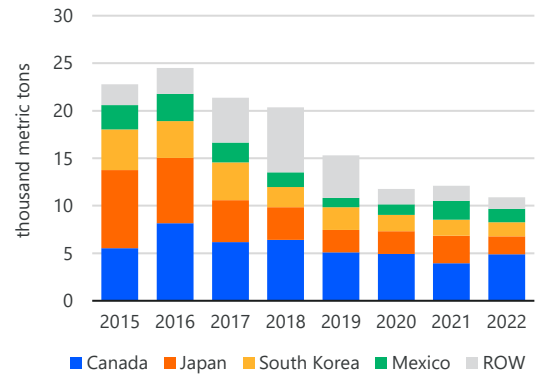
strawberries, nor only intended for the US market. They are a general trend of a growing industry. As for US exports of frozen strawberries, exports to Canada remain stable, while exports to Japan, South Korea, and other faraway markets have significantly declined (see Figure 9).

Figure 8: US frozen strawberry imports, 2015-2022



Source: USDA, Rabobank 2023

Figure 9: US frozen strawberry exports, 2015-2022



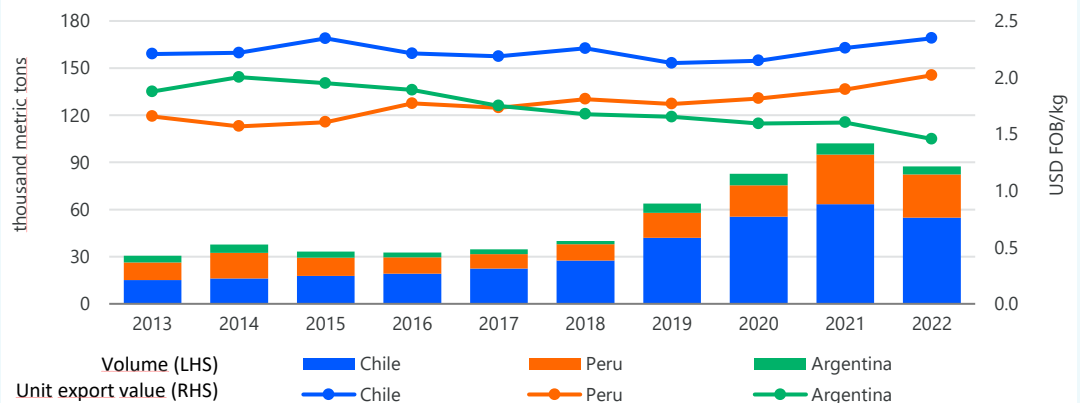
Source: USDA, Rabobank 2023

Expanding Footprint of Frozen Fruit From South America

Exports of South American frozen strawberries remained flat over the first half of the past decade (with a CAGR of 1.5%). In 2018, however, exports started to grow exponentially, reaching a peak in 2021 when US demand for this fruit was high. In 2022, exports from South America declined as utilization levels of fresh domestic strawberries in the US increased for the first time in four years.

In terms of volume, South American frozen strawberry exports are led by Chile and followed by Peru, which combined represent more than 90% of the supply. In terms of unit export value, Chile takes a clear lead ahead of Peru, while Argentina's unit value has visibly declined in the past 10 years (see Figure 10).

Figure 10: South American frozen strawberry exports, 2013-2022



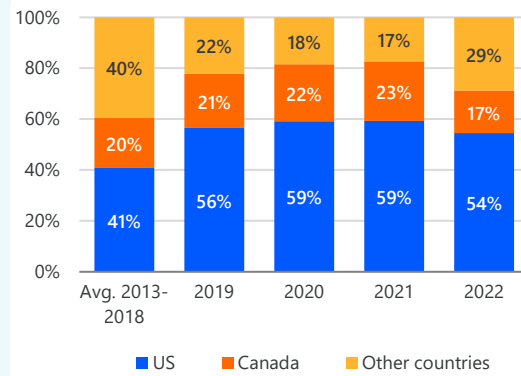
Source: Odepa, Minagri, Trade Map, Rabobank 2023

It is worth noting that, despite the rise in the exports from South America in the last four years, the export value kept increasing. This will help both Chile and Peru to continue to increase their exports in the medium term, establishing them as reliable counter-seasonal suppliers to the US, offering a year-round supply, but with more emphasis in the winter and spring months (November to May).

Both Chile and Peru are among the top 10 global exporters (numbers five and nine, respectively, in 2021). The US and Canada are their main destinations, representing a greater

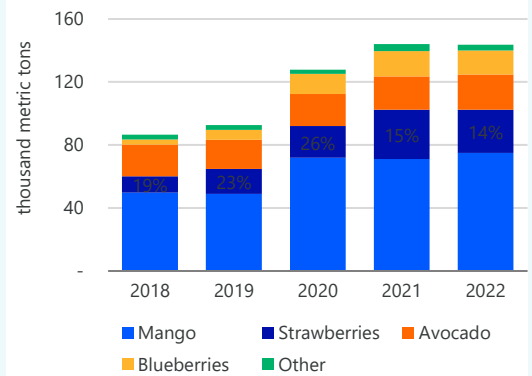
than 70% combined share on average over the last four years (see Figure 11). Other important destinations include Japan, China, and South Korea. While Chile's frozen fruit exports are focused on berries (strawberries, blueberries, and caneberries), Peru has a wider supply including other fruits such as mangos and avocados. Strawberries are Peru's second-most-important exported fruit, although they have been losing share in the last three years (see Figure 12).

Figure 11: South American frozen strawberries share of export destinations, 2013-2022



Source: Odepa, Minagri, Trade Map, Rabobank 2023

Figure 12: Peruvian frozen fruit exports, 2018-2022



Source: Peru customs, Rabobank 2023

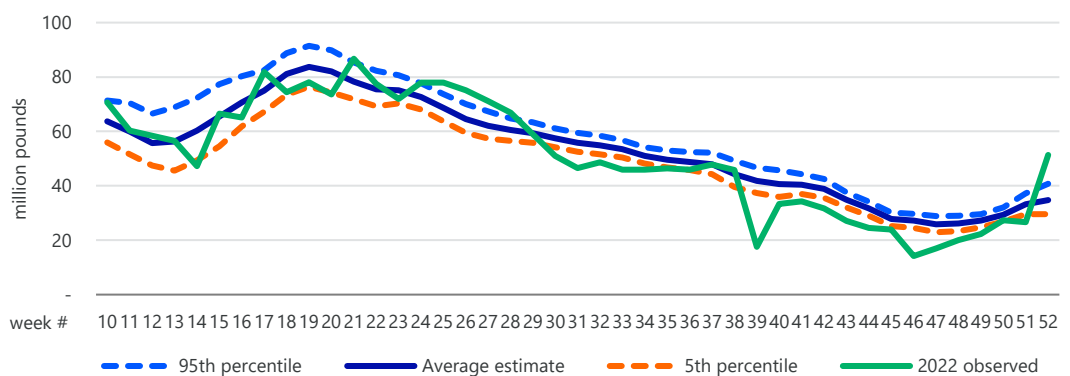
At the moment of writing this report, heavy rains have affected the California strawberry acreage. It is expected that, depending on the level of damage, the pressure to keep up with fresh strawberry demand could leave less volume for frozen production. This could prompt higher imports from Latin America, at higher prices than in 2022.

2023 Outlook for the US Fresh Strawberry Market

Yes, Higher or Record Shipments Are Expected... Weather Permitting

Based on planted acreage by region and probability distributions for weekly yields, we estimate that fresh strawberry arrivals in 2023 (weeks 10 to 52) will be roughly 5% higher than those during the corresponding period in 2022. We expect availability to peak at week 19, with a 50% probability of arrivals being between 80m and 87m lb. Our average estimate is 84m lb of fresh strawberries arriving in the market in week 19, up 7% YOY (see Figure 13).

Figure 13: Estimates for weekly fresh strawberry arrivals in the US market, 2023



Source: California Strawberry Commission, USDA, Rabobank estimates 2023

Our estimates show wider probability ranges between the 95th and 5th percentiles during the spring transition period, between weeks 11 and 16. Shipments are more likely to be disrupted or delayed during these weeks due to weather events, such as the multiple atmospheric rivers that have hit California during the winter.

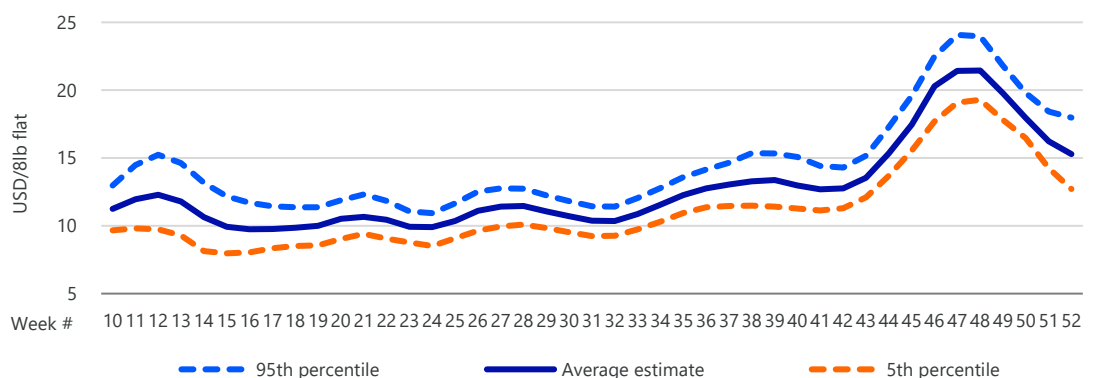
Overall, our probabilistic estimates capture the possibility of 'normal' yield variation because of changes in weather and growing conditions for every specific week. However, a severe disruption could push availability higher than our 95th percentile or below our 5th percentile estimates. One example is week 39 in 2022, when availability declined considerably due to a heat wave.

At the moment of writing, some strawberry area in Salinas/Watsonville is [reported](#) to have been impacted by the record rainfall and flooding. Although industry players and representatives are visualizing some potential [scenarios](#), it is too early to have estimates on the magnitude of the temporary or permanent damage to fields or plants. If damage in some of the Salinas/Watsonville acreage is permanent, then shipments are likely to be below our average estimates, particularly between weeks 20 and 35.

What About Price Expectations?

Based on our weekly probabilistic estimates for fresh strawberry arrivals in the US, specific seasonal demand factors, and other variables, we estimate weekly shipping-point prices for strawberries (see Figure 14). Our estimates can be interpreted as usual. For example, for week 19 our average estimate is USD 10 per flat, while we estimate a 5% probability that prices may be at USD 11.35 per flat or higher (95th percentile), and a 5% chance of prices being at USD 8.55 or lower (5th percentile) for this specific week.

Figure 14: Weekly shipping-point price estimates for non-organic fresh strawberries in the US, 2023



Source: USDA, Rabobank estimates 2023

Shipping-point strawberry prices tend to react disproportionately to variations in availability. Although supply disruptions may happen at any time, pinning down a specific week for unseasonal rain, a cold front, or a heat wave (i.e. predicting the weather several months in advance) is not possible. Thus, our estimates capture the most likely price levels for any given week of the year, based on the interaction of seasonal and weekly supply and demand factors.

More Opportunities for the Top Berry

With retail sales of about USD 8.6bn during 2022, berries are the leading category in the fruit aisle in terms of value, accounting for 23% of retail fresh fruit sales, [according to IRI](#). Berries and grapes were the only two fruits that ended 2022 with year-on-year improvements in both dollar sales and volume sales at retail, proving their unique value to consumers.

Strawberries enjoy one of the highest household penetration levels in the US among fresh fruits and the highest per capita consumption in the berry patch. Product attributes that will continue driving consumer demand for strawberries include the usual suspects of healthfulness, convenience, taste, and quality.

The increasing availability of all berries year-round means more marketing opportunities for the whole category. Marketers would do well to improve their understanding of key consumer segments and purchasing habits – especially determining whether fresh berries are complements or substitutes – to tailor marketing strategies accordingly. Moreover, consumption of frozen berries will benefit from the so-called ‘smoothie effect’ adopted by older and younger generations of consumers.

Imprint

RaboResearch

Food & Agribusiness

far.rabobank.com

David Magaña

Senior Analyst – Fresh Produce

David.Magana@rabobank.com

Gonzalo Salinas

Senior Analyst – Fresh Produce

Gonzalo.Salinas@rabobank.com

© 2023 – All rights reserved

This document is meant exclusively for you and does not carry any right of publication or disclosure other than to Coöperatieve Rabobank U.A. ("Rabobank"), registered in Amsterdam. Neither this document nor any of its contents may be distributed, reproduced, or used for any other purpose without the prior written consent of Rabobank. The information in this document reflects prevailing market conditions and our judgement as of this date, all of which may be subject to change. This document is based on public information. The information and opinions contained in this document have been compiled or derived from sources believed to be reliable; however, Rabobank does not guarantee the correctness or completeness of this document, and does not accept any liability in this respect. The information and opinions contained in this document are indicative and for discussion purposes only. No rights may be derived from any potential offers, transactions, commercial ideas, et cetera contained in this document. This document does not constitute an offer, invitation, or recommendation. This document shall not form the basis of, or cannot be relied upon in connection with, any contract or commitment whatsoever. The information in this document is not intended, and may not be understood, as an advice (including, without limitation, an advice within the meaning of article 1:1 and article 4:23 of the Dutch Financial Supervision Act). This document is governed by Dutch law. The competent court in Amsterdam, the Netherlands has exclusive jurisdiction to settle any dispute which may arise out of, or in connection with, this document and/or any discussions or negotiations based on it. This report has been published in line with Rabobank's long-term commitment to international food and agribusiness. It is one of a series of publications undertaken by the global department of RaboResearch Food & Agribusiness.