



IBO

Summit 2023
Poland



**GLOBAL
STATE^{OF}_{THE}
BLUEBERRY
INDUSTRY REPORT
2023**

THANK YOU TO THE REPORT TEAM



CORT BRAZELTON
Editor
IBO Board Member & Co-Founder



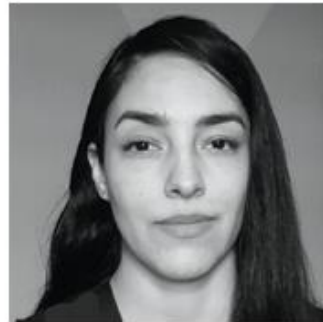
COLIN FAIN
Project Manager
CEO Agronomics



MATT OGG
Narrative
Journalist Agronomics



CLAUDIO RIQUELME
Digital Infrastructure
CTO Agronomics



VIOLETA RODRIGUEZ
Editorial Design
UX/UI Designer Agronomics



SARAH ILYAS
Data Collection
Data Journalist Agronomics

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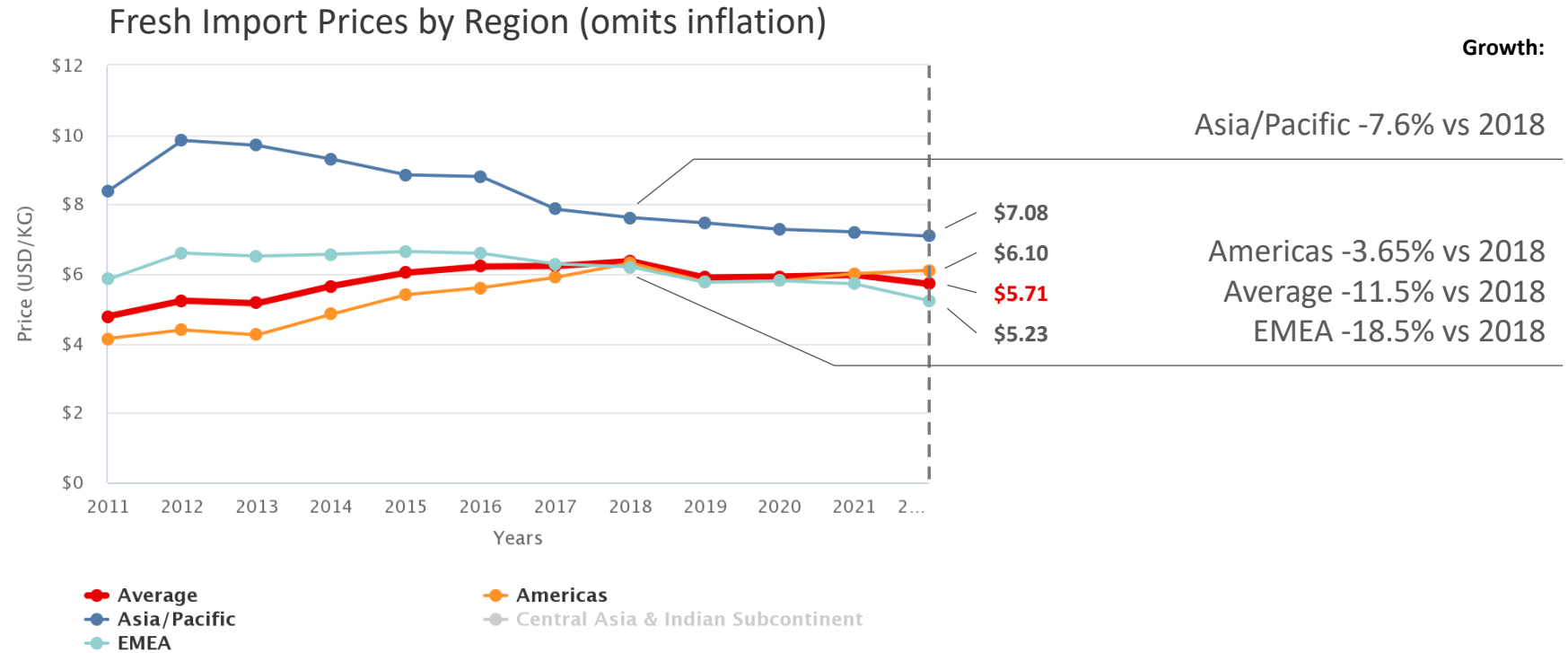
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Industry Trends

PRESSURE ON PRICING



Growth:

Asia/Pacific -7.6% vs 2018

Americas -3.65% vs 2018

Average -11.5% vs 2018

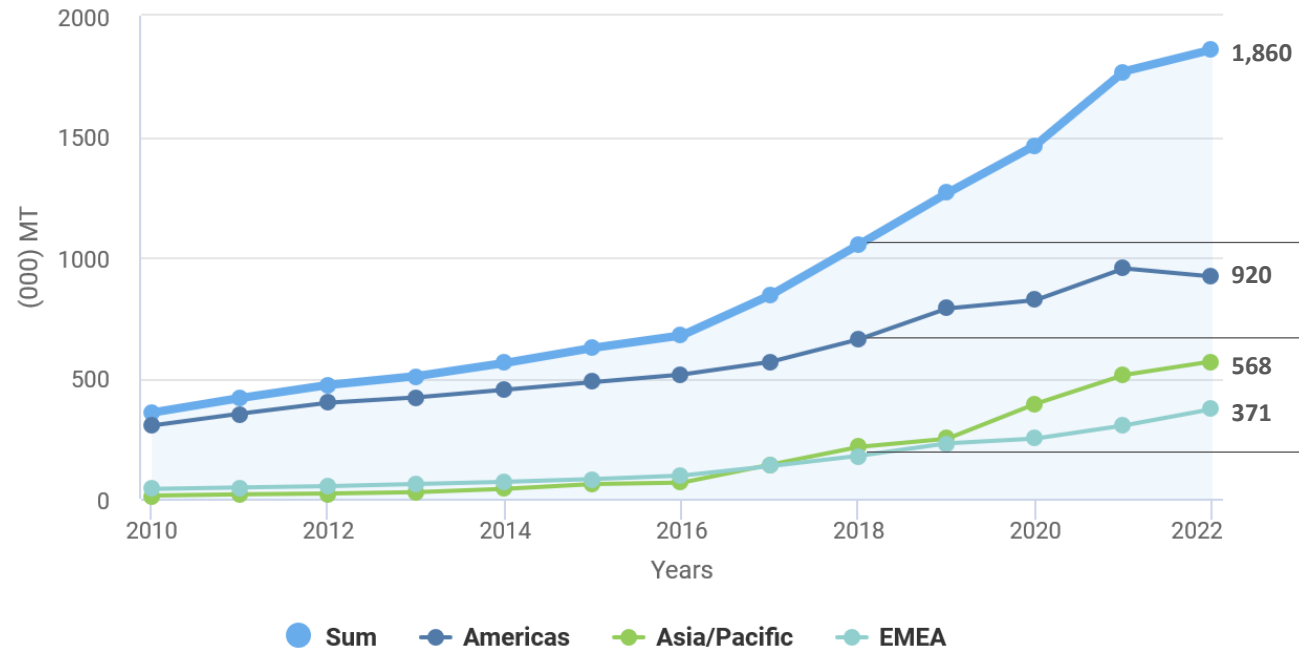
EMEA -18.5% vs 2018

- Downward trend in global pricing after 2018, especially accounting for inflation
- Biggest decreases in EMEA and ASIA
- In 2022 Americas pricing held up by Canadian imports from the US and Mexico



RAPID INCREASE IN PRODUCTION

Global Highbush Production by Region



Growth:
 Global 77% vs 2018
 Americas 39% vs 2020
 Asia/Pacific 165% vs 2018
 EMEA 108% vs 2018

¹ Percentage change compared to 2018

Source: IBO

HB Production has increased by 77% since 2018
 Estimated 2,030 (000) MT produced including wild



INCREASING PRODUCTION COSTS

- Margins under pressure
 - Rise in overall input costs (including labor) during 2022 is 20-30%
 - Non-harvest costs increase by 50-100%
 - Fortunately, costs are beginning to normalize
 - Special thanks to David Magaña, Rabo Bank report contribution on production economics



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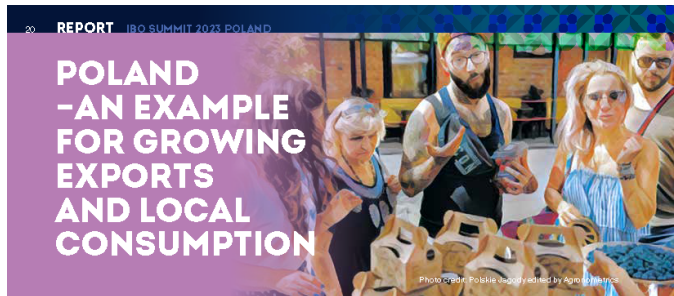
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Industry Trends: Strategies for success in a more competitive environment

INCREASING DEMAND THROUGH PROMOTIONS



Adapted from the Special Report on Poland in the 2023 IBO Global State of the Blueberry Industry Report

Although the Polish market is relatively small with a population of around 40 million, per capita consumption has grown substantially to reach an impressive 1.83 kg/person in 2022. The methodology for calculating this figure adds the country's total production with imports, subtracts exports, and divides by the population. It is in essence a measure of how much fruit stays in the country. Put in this light, Poland even stands taller than such behemoths as the U.S. which had a utilization of 1.78 kg/person during the same reference year.

By contrast, the largest exporters in the world have a significant road ahead to secure consumption levels close to these figures. Using GDP per capita - a measure with which to compare the purchasing capacity of consumers from one country to the next - a producer that comes close to Poland's USD 18,000 is Chile, with a GDP per capita of USD \$15,000. Chile is also the world's second largest exporter, with a long and distinguished history producing blueberries. With a production that is designed for export, the country's internal consumption has traditionally mostly been seen as a place to offload fruit that wasn't fit enough to be exported. With the potential to increase sales of their fruit through the local market (as well as neighboring countries), Chile and other exporting countries with growing economies may be able to take a page or two out of Poland's play book. However, it has been pointed out by Chilean stakeholders that the country has much higher inequality levels than Poland with wealth skewed highly towards the extreme end of the distribution, and thus the actual disposable income of the median consumer would be much lower than the median Polish consumer.

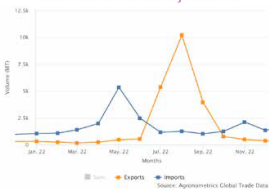
Without much investment in generic promotion, utilization of Chile's production arrived at a respectable 1.43kg/person during the 2021/2022 season, but still 28% less than Poland. However there are plans to change this figure. In December of 2022 ASOEX launched a campaign to promote internal consumption of blueberries. If Chile's utilization were to increase to the levels currently seen in Poland they would be selling approximately 7,500 MT more fruit during the 2021/2022 season, to a market with fewer logistical

risks. This figure equates roughly to Chile's exports of fresh blueberries to the United Kingdom, its 3rd largest trade partner by volume. The elimination of long transit times and reduced cost to market for this portion of the crop would benefit both the domestic industry and domestic consumers.

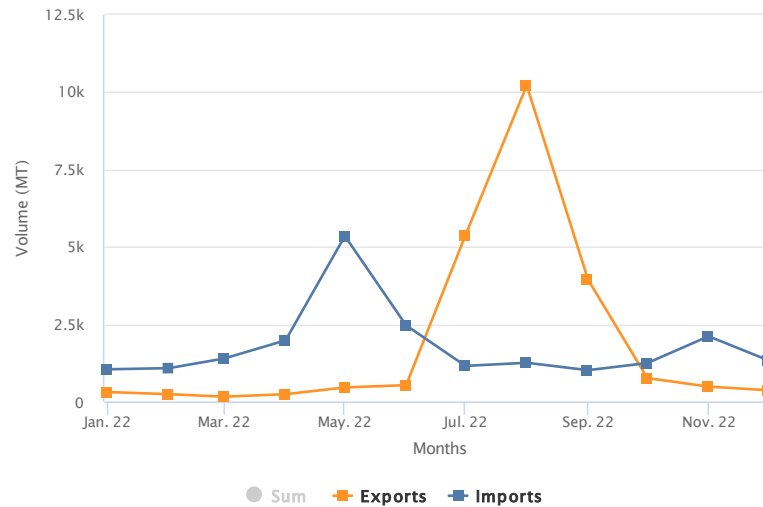
Whilst it is understood that the Chilean industry is perhaps taking more lessons from neighboring Argentina than Poland when it comes to developing a domestic market, the experience of Poland is nonetheless instructive. Further development of this program for Chile could open opportunities not just for the domestic industry, but other supply partners that could potentially export to the country.

In Poland, growing internal consumption has opened up the opportunity for imports to help complement and grow the market with counterseasonal supply. With exports very nearly matching up to imports, Poland has found a way for its citizens to consume a volume equivalent to their entire yearly production, but through trade, they have been able to spread out the window that Poles have to eat blueberries to the entire calendar year, not just the summer months where they have production.

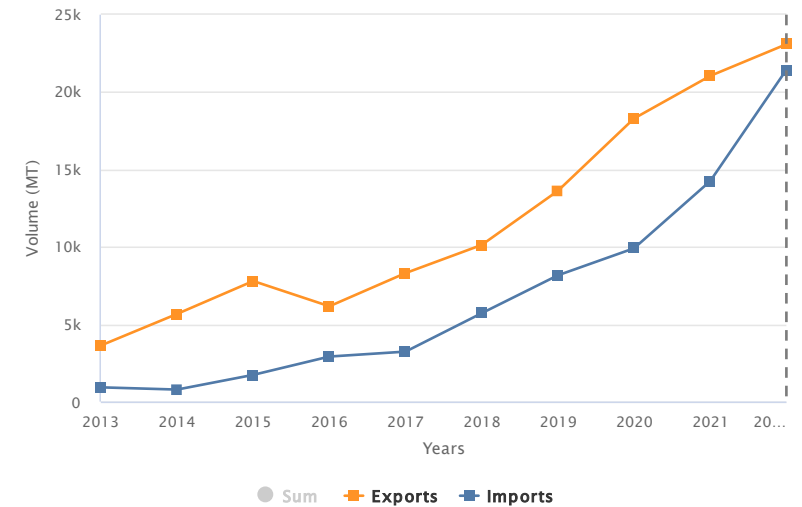
Polish Fresh Movements by Trade Flow



Polish Fresh Movements by Trade Flow



Polish Fresh Movements by Trade Flow



FIELD EFFICIENCY AND PRODUCTIVITY TAKE CENTRE STAGE, PROMPTING AGGRESSIVE VARIETAL CHANGEOVER

- Focus on Yields “if you haven’t got something that’s giving you a big yield, you’re wasting your time.”
- Size, detachability looking to increase harvest efficiency
- Trend pushing towards economies of scale and consolidation
- Regions with low costs relative to competition (labor, transport, etc.) continue to expand (Mexico, Peru, Morocco)

HIGHER BENCHMARKS ON QUALITY

- Improvements in firmness, flavor, texture, shelf life & eye appeal reaching markets in substantial volume.
- New genetics reaching maturing is major driver.
- Following boom in Southern highbush, firms eyeing northern highbush next to balance supply.
 - Southern highbush variety renewal is in full swing (Peru, Spain, Morocco)
- Organics sometimes sold as conventional to move volumes. Some see new genetics as better way to profitability.
- Improving quality is key to demand growth
 - Concerns expressed that returns for new varieties are impacted by volumes of inferior quality fruit.



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Industry Trends: Other Trends

MACHINE HARVESTING ADOPTION CONTINUES, BUT VIEWS ON THE PRACTICE ARE DIVIDED

- Mixed reviews
 - New technology showing potential when pared with right varieties (not conclusive, not scaled).
 - Most machine harvested fresh fruit today is reported as detriment to the market
- Clearly benefits of mechanizing fresh blueberry harvest is drawing attention and innovation.
- Most testing the technology currently are doing so because they have no option, not because they want to.

ENVIRONMENT, SOCIAL AND GOVERNANCE (ESG)

- Three most prominent subjects
 - Packaging
 - Climate change
 - Regenerative agriculture
- Blueberry success stories
 - Less water usage than other crops
 - Supports large labor force (schools, health clinics and vocational training)
 - Strong health narrative for consumers
- Thanks to Tamara Muruetagoiena IFPA director of sustainability for insights.

HEALTH RESEARCH UPDATE

- Thanks to Leslie Wada, Senior Director of Nutrition and Health Research at the USHBC/NABC, for insights.



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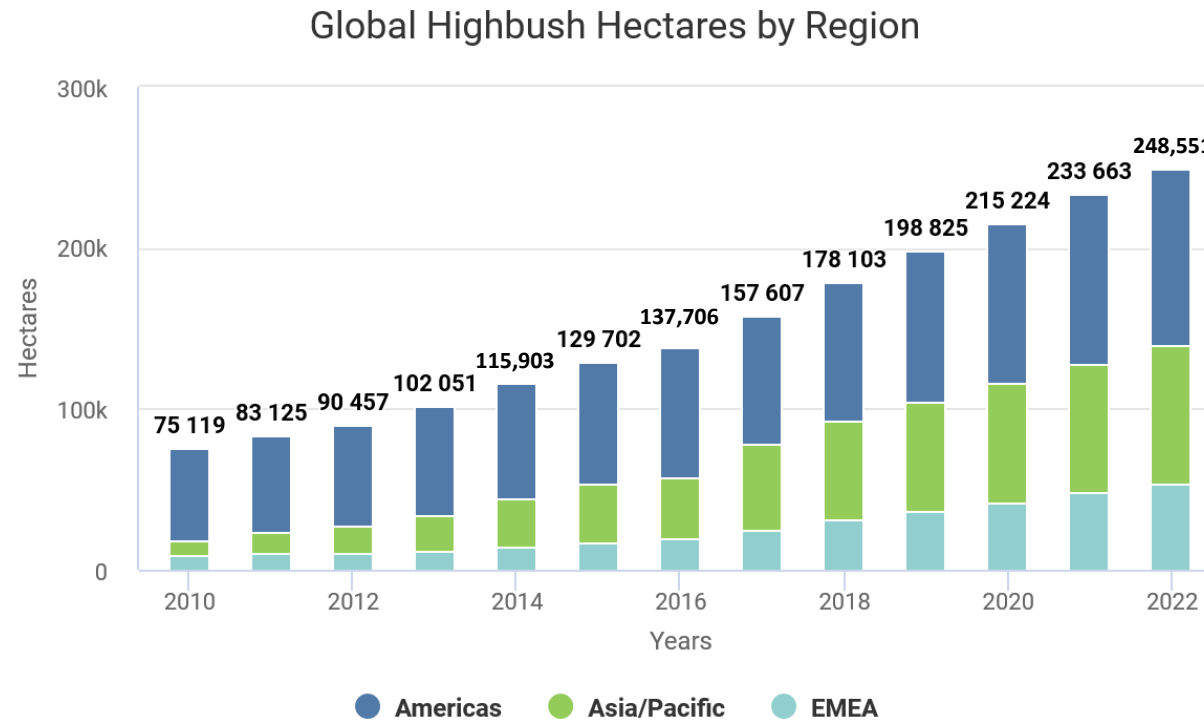
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Global Statistics

GLOBAL Highbush HECTARES BY REGION



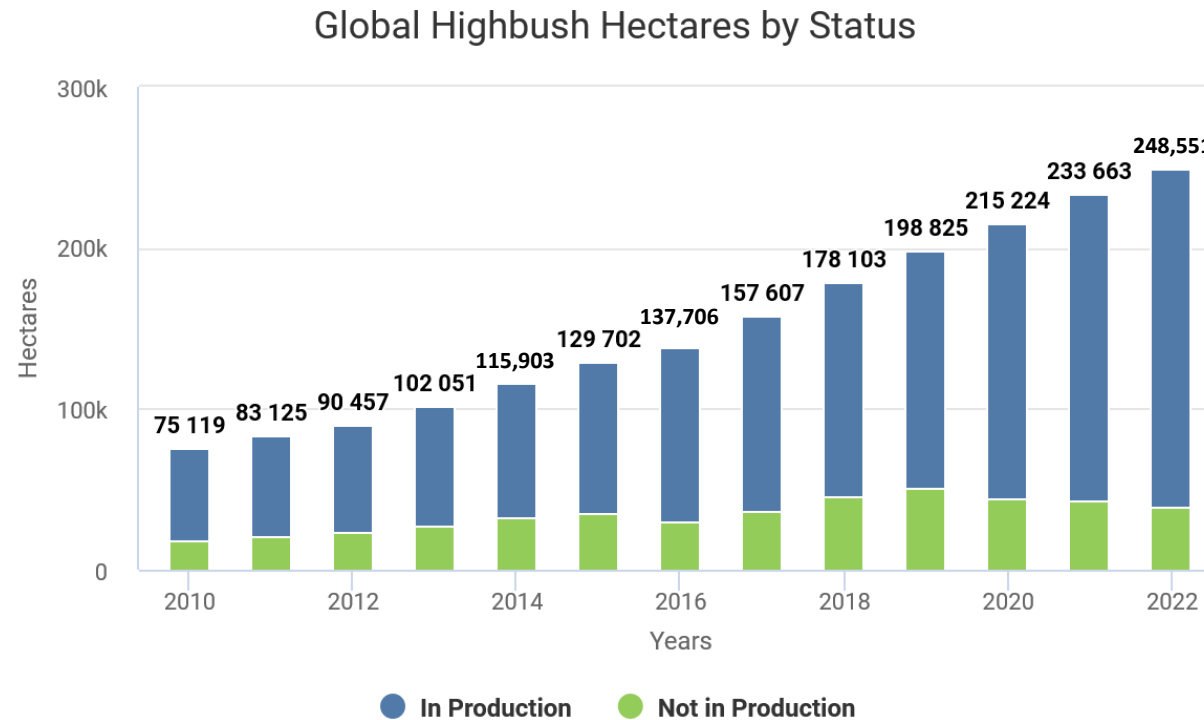
Source: IBO

In 2022 Hectares Planted totaled estimated 248,551

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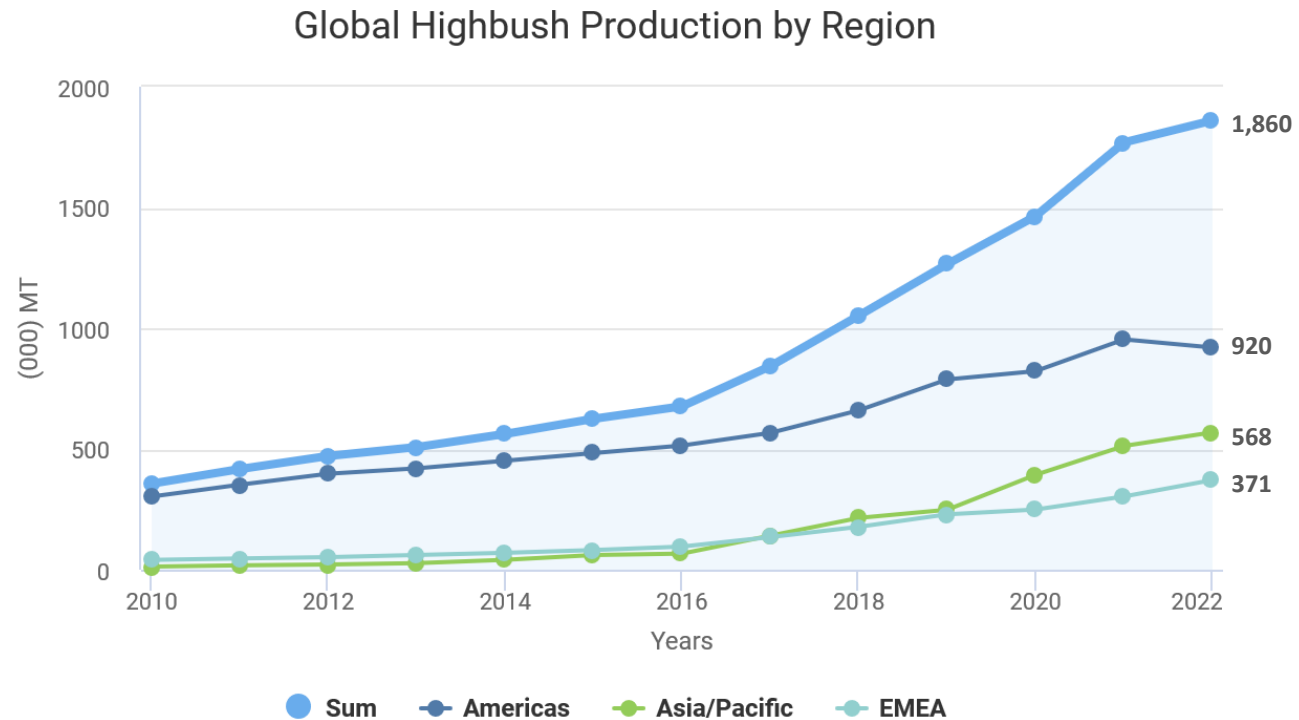
GLOBAL Highbush HECTARES BY STATUS



Source: IBO

Estimated 16% of 2022 Hectares Planted are not in commercial production.
Down from 19% in 2021.

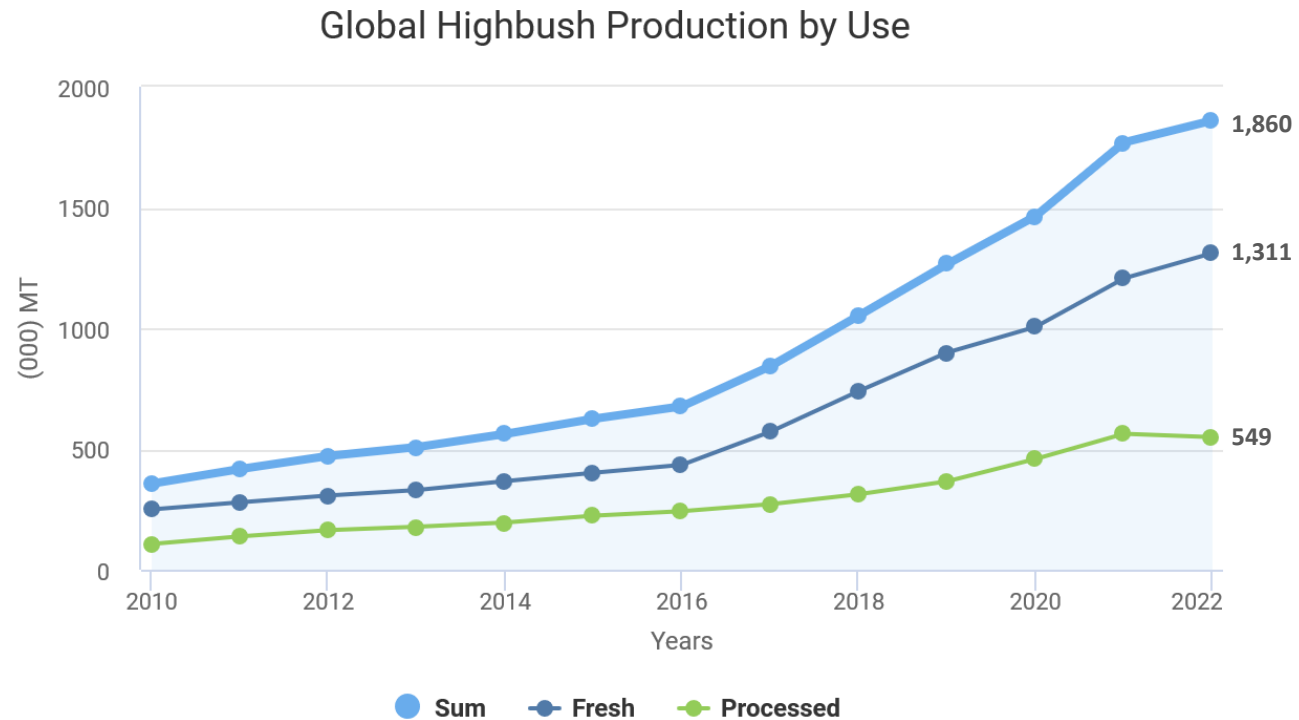
GLOBAL Highbush PRODUCTION BY REGION



Source: IBO

In 2022 an estimated 1,860 (000) MT were produced – Fresh & Processed

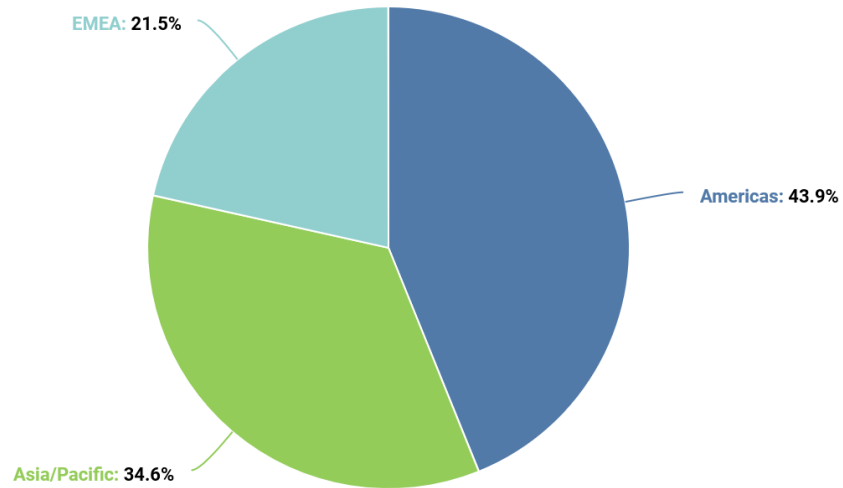
GLOBAL Highbush PRODUCTION BY USE



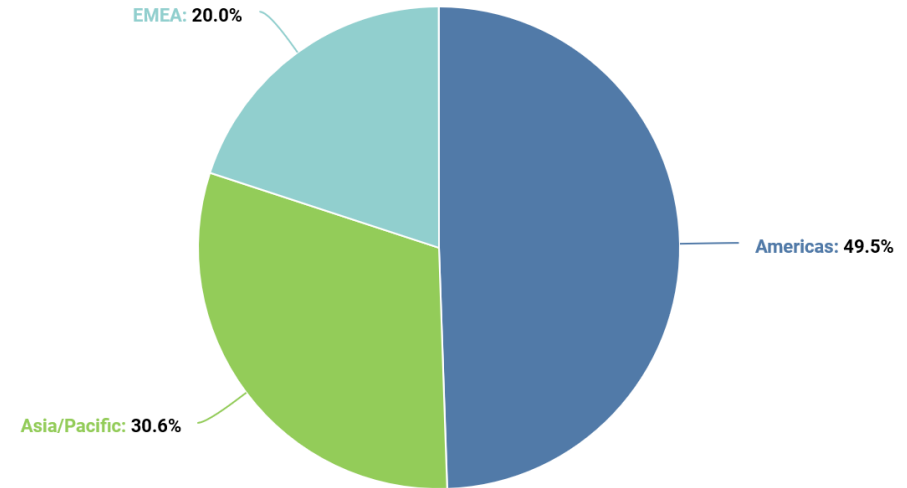
In 2022 an estimated 30% of production went to the processed industry

GLOBAL Highbush HECTARES AND PRODUCTION

2022 Global Highbush Hectares by Region

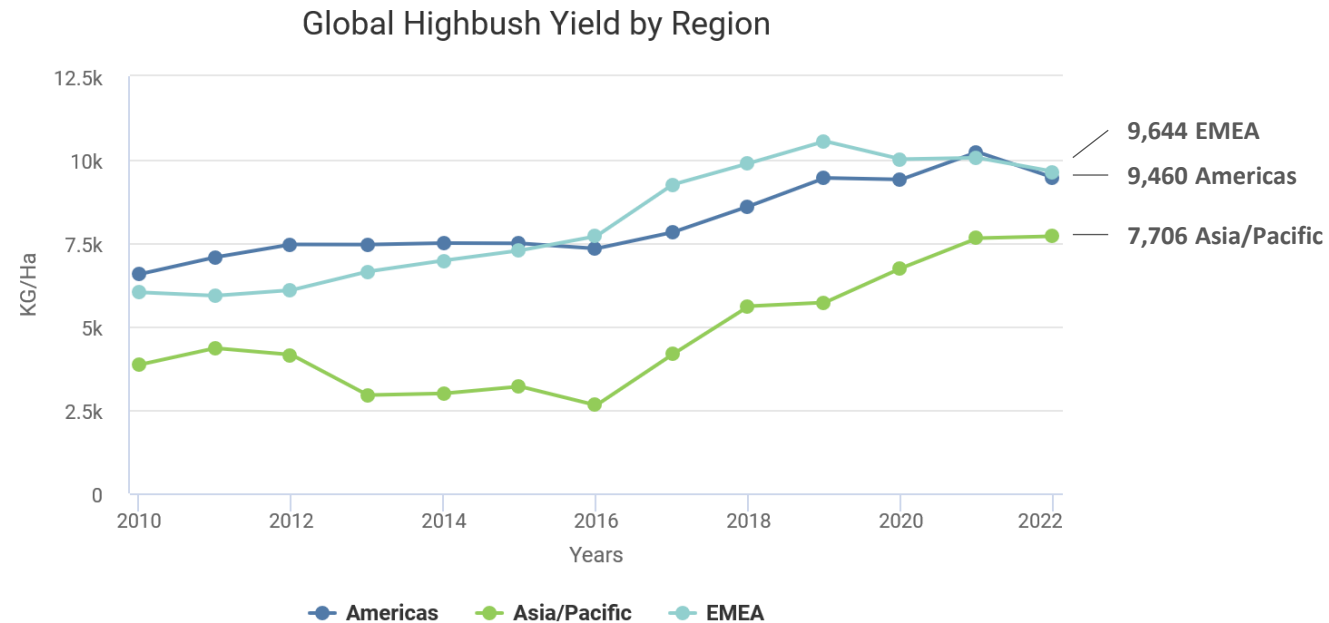


2022 Global Highbush Production by Region



Americas Production dropped below 50% for first time.

GLOBAL Highbush YIELDS BY REGION



Globally yields are down, Largest decreases from Americas (Mexico, US & Canada)
EMEA (Spain, Portugal & So. Africa), Asia/Pacific (South Korea & NZ)

GLOBAL Highbush PRODUCTION METRICS

Global Highbush 2022 Production Metrics

Hectares Planted:	248,551.3 Ha
Hectares in Production:	209,565.6 Ha
Production:	1,860.08 (000) MT
Growth in Production ¹ :	▲ 90.6 (000) MT (4.87%)
Growth from Hectares ² :	▲ 187.38 (000) MT (206.94%)
Growth from Yield ³ :	▼ -96.83 (000) MT (-106.94%)
Yield:	8,875.69 (Kg/Ha)

¹ Growth in volume produced compared to previous season

² Volume increase from new hectares coming into production

³ Volume increase from higher yields

Decrease in yields took 96.83 (000) MT out of the market.

Average growth this year has come predominantly from new hectares coming into production



Down from 9,293 (Kg/Ha) in 2021

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TOP 10 Highbush PLANTINGS BY COUNTRY

2022 Top 10 Highbush Hectares by Country

#	Country	2019 Hectares	2020 Hectares	2021 Hectares	2022 Hectares
1	China	60,300	66,400	71,781	77,641
2	United States	43,530	42,219	43,214	42,084
3 	Peru	12,292	15,406	18,381	21,491
4 	Chile	15,784	18,185	18,802	18,375
5	Canada	13,002	11,696	12,364	12,034
6	Poland	8,450	9,500	11,000	11,913
7	Mexico	6,700	7,900	9,100	11,400
8	Ukraine	3,183	4,383	5,318	5,500
9	Spain	4,030	4,210	4,570	4,810
10	South Africa	2,661	3,322	3,500	3,800



These 10 countries represent 89% of estimated global plantings

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TOP 10 Highbush PRODUCTION BY COUNTRY

2022 Top 10 Highbush Production by Country

#	Country	2019 Production	2020 Production	2021 Production	2022 Production
1	China	211.91	347.20	468.22	525.31
2 	Peru	134.83	179.58	261.73	299.67
3 	United States	304.63	282.64	328.18	277.63
4	Chile	179.06	195.76	185.44	166.35
5	Canada	91.66	82.42	80.32	76.15
6	Mexico	53.66	57.67	74.20	75.87
7	Spain	60.26	55.66	73.94	69.19
8	Poland	42.05	54.10	55.50	68.50
9	Morocco	31.75	36.00	39.03	47.07
10	South Africa	13.65	15.80	26.00	30.50



These 10 countries represent 60% of estimated global volumes

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TOP 10 HIGHBUSH FRESH PRODUCTION BY COUNTRY

2022 Top 10 Highbush Fresh Production by Country

#	Country	2019 Fresh Production	2020 Fresh Production	2021 Fresh Production	2022 Fresh Production
1	Peru	125.40	162.73	243.53	285.58
2	China	106.90	171.66	223.57	258.53
3	United States	169.25	153.03	177.06	159.17
4	Chile	136.96	138.78	123.04	101.35
5	Mexico	53.13	57.00	72.70	74.93
6 	Poland	40.30	52.10	52.50	65.50
7 	Spain	56.52	49.80	66.71	62.57
8	Morocco	30.60	34.20	37.07	45.07
9	Canada	39.50	31.72	33.29	32.61
10	South Africa	12.66	15.33	24.00	28.00



These 10 countries represent 84% of estimated global fresh volumes

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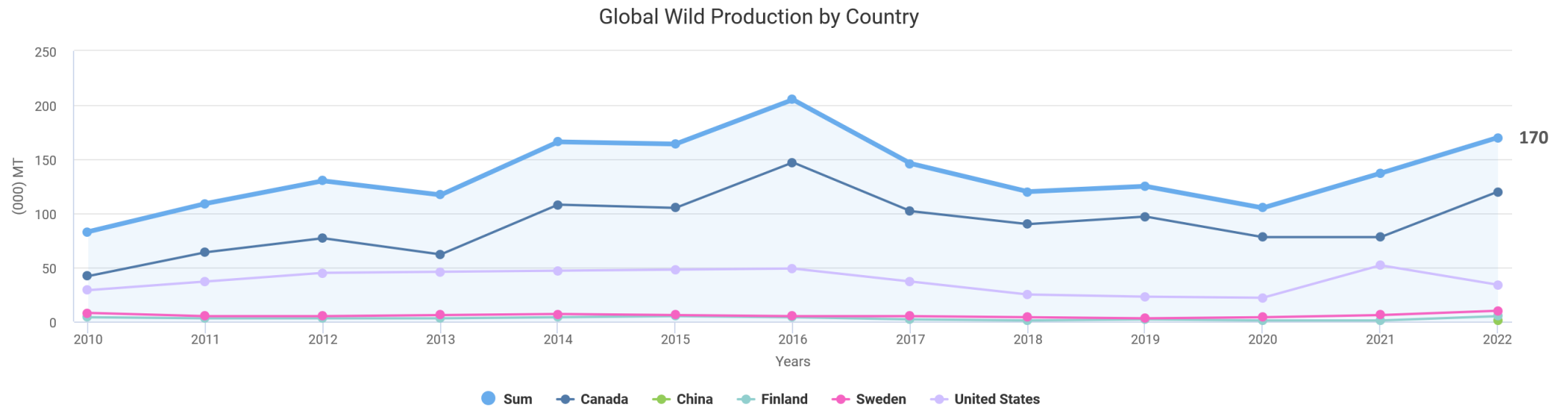
TOP 10 Highbush PROCESSED PRODUCTION BY COUNTRY

2022 Top 10 Highbush Processed Production by Country

#	Country	2019 Processed Production	2020 Processed Production	2021 Processed Production	2022 Processed Production
1	China	105.01	175.54	244.65	266.78
2	United States	135.38	129.61	151.12	118.46
3	Chile	42.10	56.98	62.40	65.00
4	Canada	52.16	50.70	47.03	43.54
5	Peru	9.43	16.85	18.20	14.09
6	Spain	3.74	5.86	7.23	6.62
7	Argentina	4.00	4.80	7.02	6.50
8	Germany	1.85	1.70	4.20	5.70
9 	Portugal	1.82	3.15	2.60	3.00
10 	Poland	1.75	2.00	3.00	3.00

These 10 countries represent 74% of estimated global processed volumes

GLOBAL WILD PRODUCTION BY COUNTRY



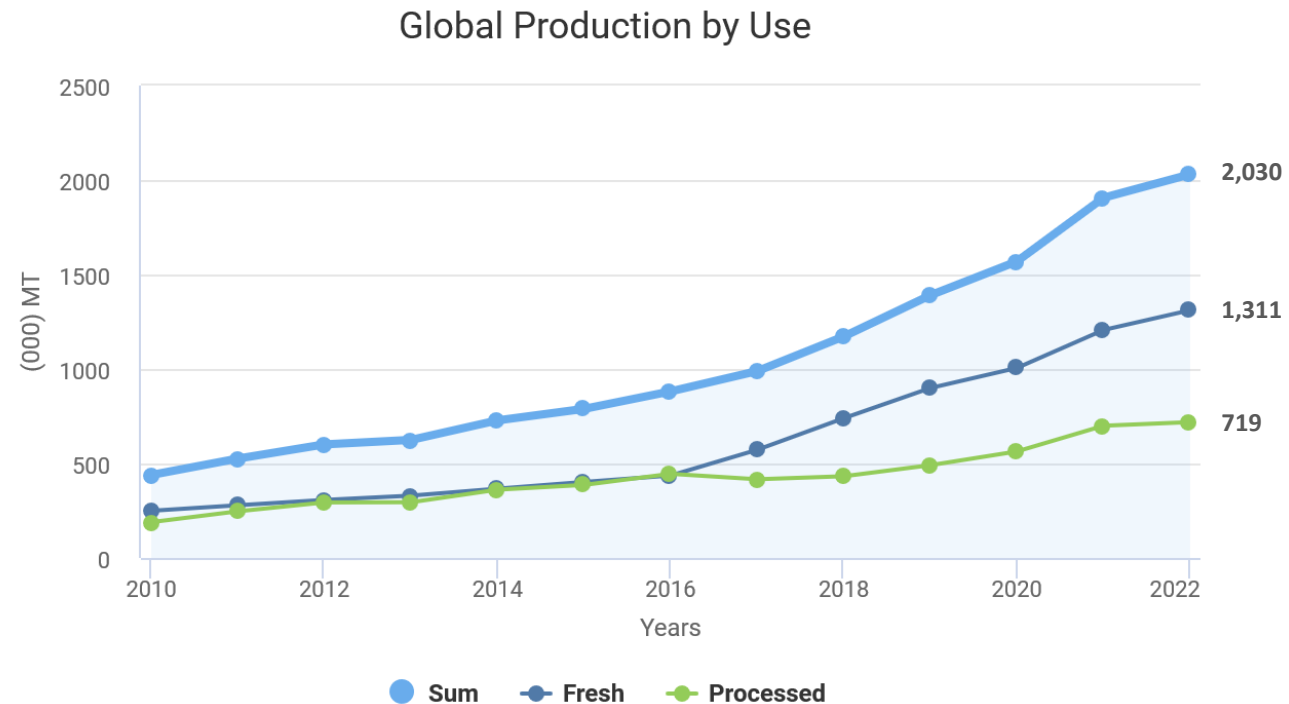
Source: IBO

Lowbush share of processed production has gone down to 24% from its high of 46% in 2016

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GLOBAL Highbush & Wild Processed Production BY CATEGORY



Source: IBO

Fresh and Processed volumes surpasses 2,000 (000) MT
fresh share of production has gone up to 65%
from 50% in 2016

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Conclusions & Recomendations

CONCLUSIONS & RECOMMENDATIONS

- Where is the Growth Coming From?: Yields were down but many Low/Zero Chill and High Chill plantings maturing
 - Average Yields Remain Remarkably High Relative to Historical
- Margin Pressure:
 - Increased costs (driven by inputs and wages)
 - inflation
 - Pressure on returns in nominal and real economic terms
- Fast growing ‘counter seasonal’ supply growth is making the ‘counter season the new peak’
 - Fresh availability is much more consistent, driving focus to quality and value creation year round

CONCLUSIONS & RECOMMENDATIONS

- Most Competitive companies sustaining cash flow and growth
 - Increased yields
 - Staying ahead of the ‘quality wave’ driving better pricing and demand in category
- Tying the Trends to the Data: Industry Growth, Professionalization, and Maturation Continues
- ESG of increasing importance
- Reflecting on Supply & The Market Trends
 - Fresh Market Dynamics:
 - Expanding our Base of consumers:
 - Processed Market Commentary:

CONCLUSIONS & RECOMMENDATIONS

Advice to Growers Looking to the Horizon – Have answers to these questions...

- Increased Competition
 - Who is my true competition?
 - What are their strengths and what are mine?
 - How can I leverage my strengths?

- Increased Quality Expectations
 - What are the next step to improve the firmness, shelf life, size, and flavor of my fruit to the consumer?

- Increased Harvest Costs
 - What is my best path to reduce my total per unit harvest cost while maintaining or improving quality?



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