

SORTING TECHNOLOGIES TO SUPPORT BLUEBERRY SUPPLY CHAIN



SECTION 1

- Overview of blueberry production development
- Consumption and global trends

SECTION 2

- Blueberry Industry challenges: How can technology support industry growth?

SECTION 3

- What's Next?

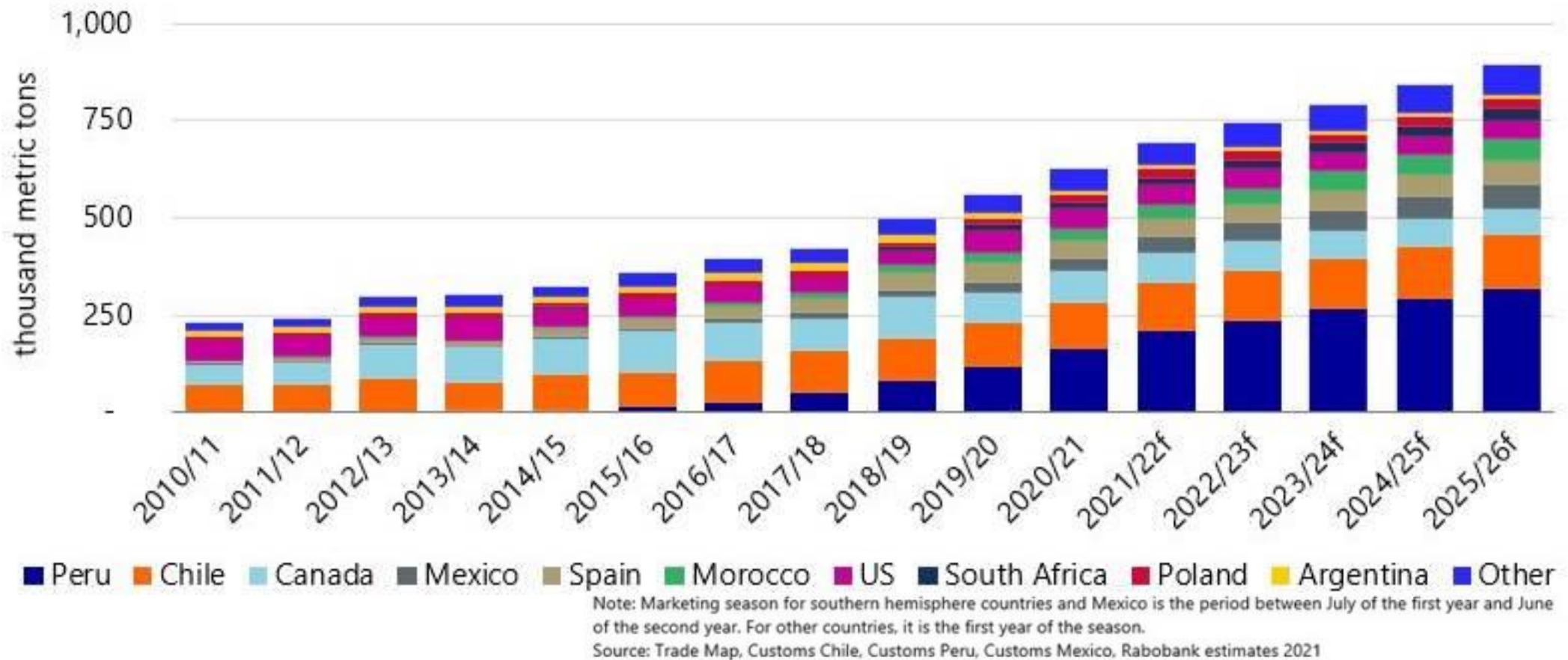


AGENDA



Blueberry production has skyrocketed in South Africa in recent years, thanks to **new cultivars** that can be grown in a variety of climates, as well as to increasing demand for **superfoods**.



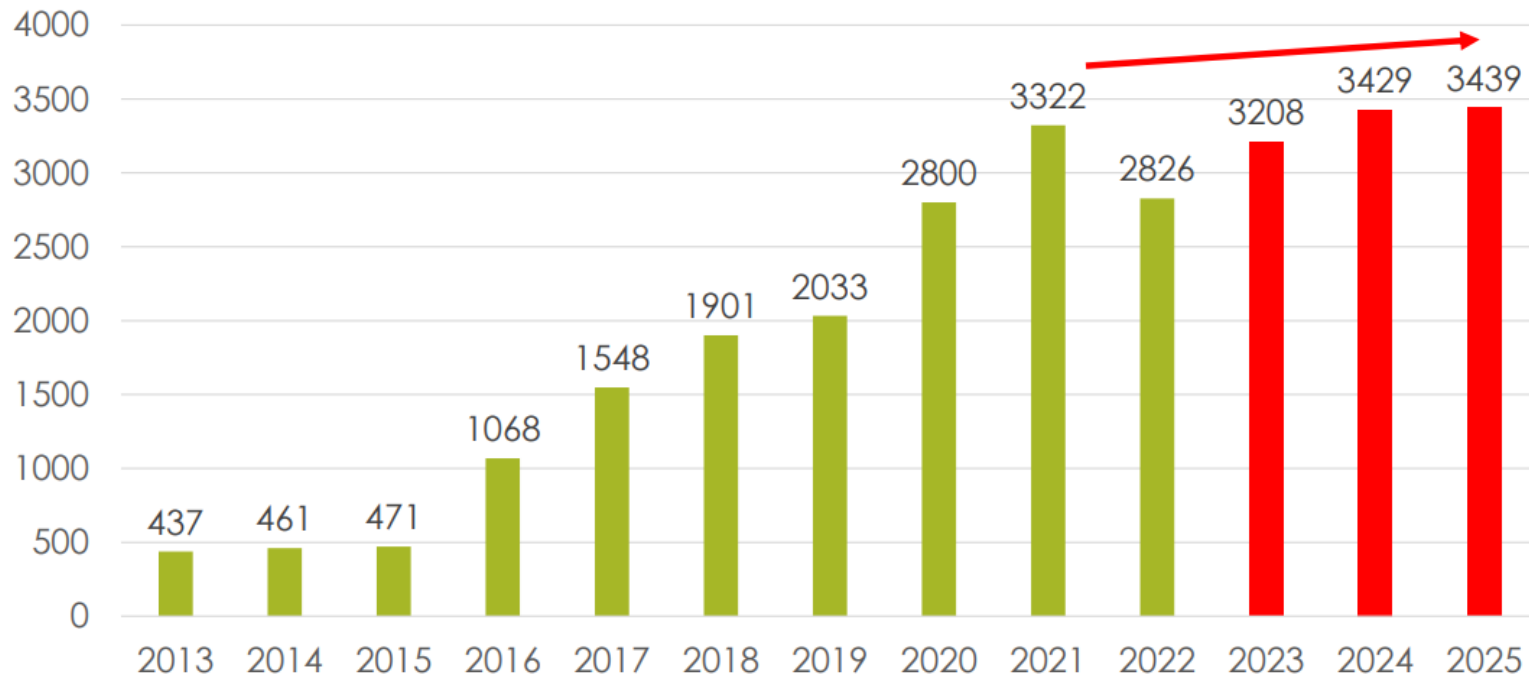


GLOBAL PRODUCTION

Record production: based on the data of 2021, production of fresh blueberries rose by 21% breaking the 1,000(000) MT mark for the first time in history.

Even growth: Every subregion saw an increase. China and Peru stand out as the countries adding the most volume of fresh blueberries.

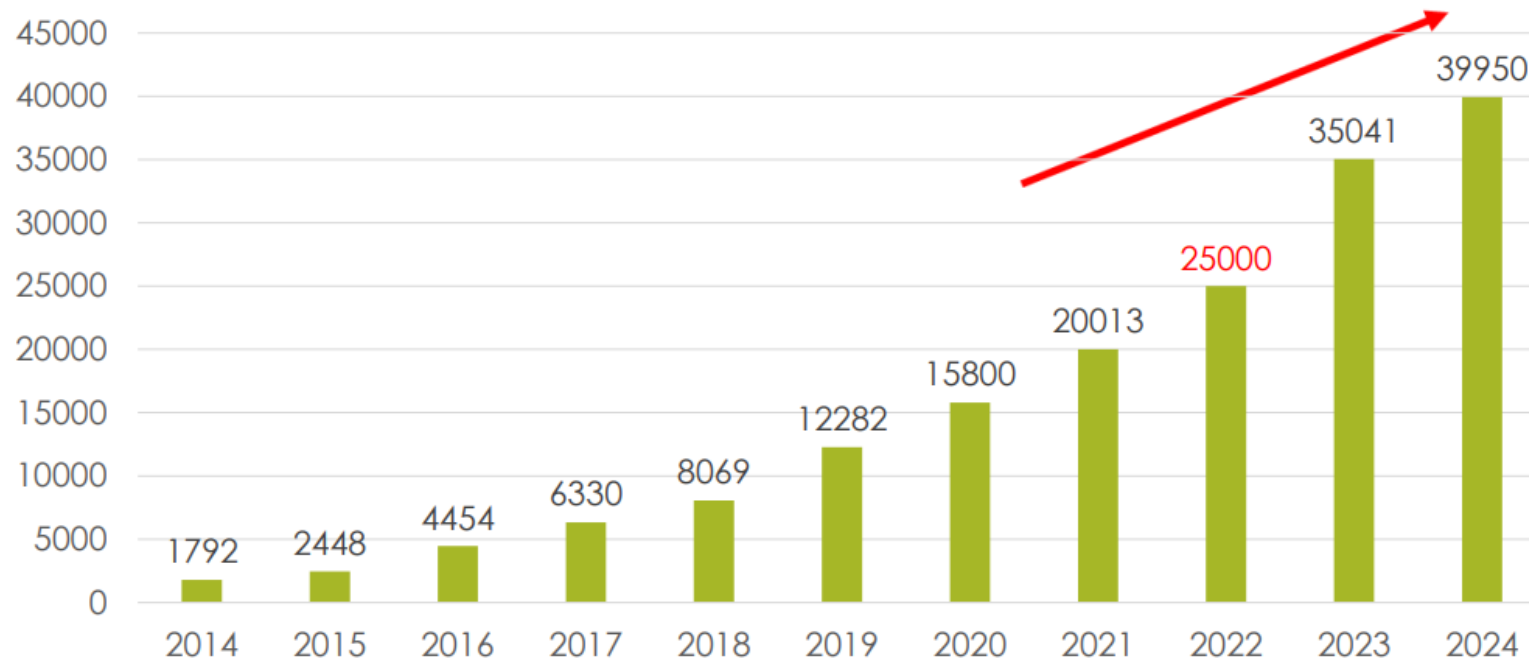
Fresh Production accounts for around 65% of total production



SA BLUEBERRY HECTARES PLANTED

The South African blueberry industry is one of the **fastest growing horticultural industries** in South Africa, both in terms of hectares planted and gross value of production.

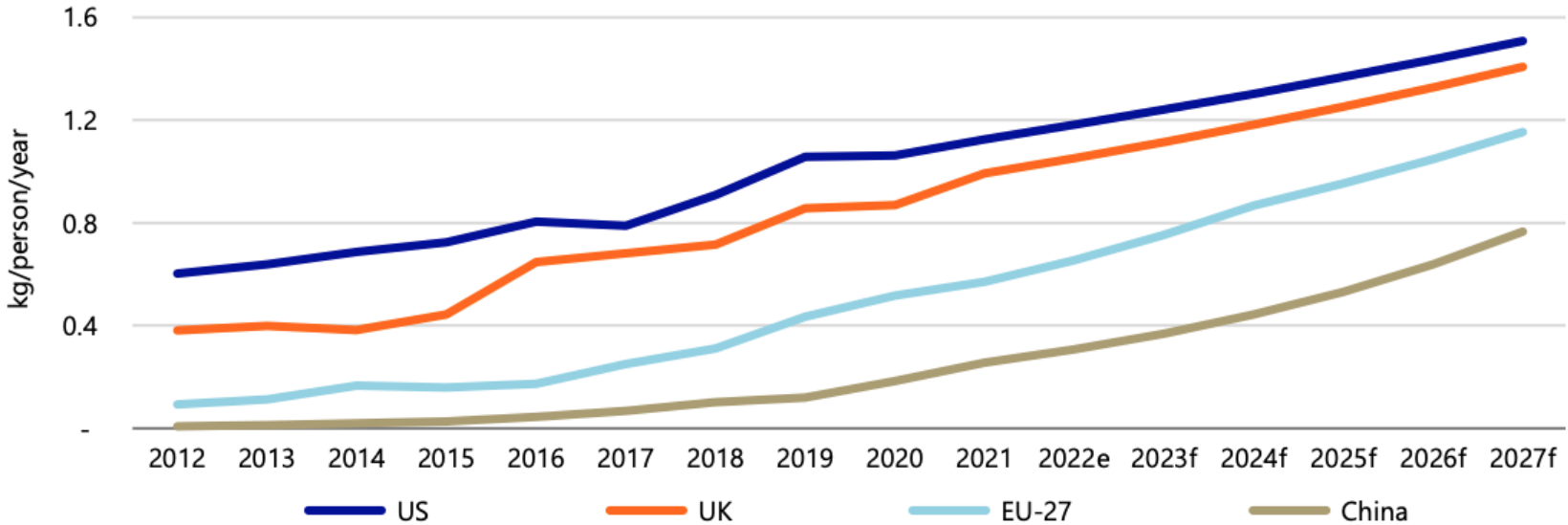




SA BLUEBERRY INDUSTRY EXPORT TONS

The blueberry industry is particularly **export orientated**. In 2018 South Africa was ranked 12th in the world for countries exporting blueberries, achieving an export volume of around 8 000 tons, while in 2021 jumped to 10th.

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

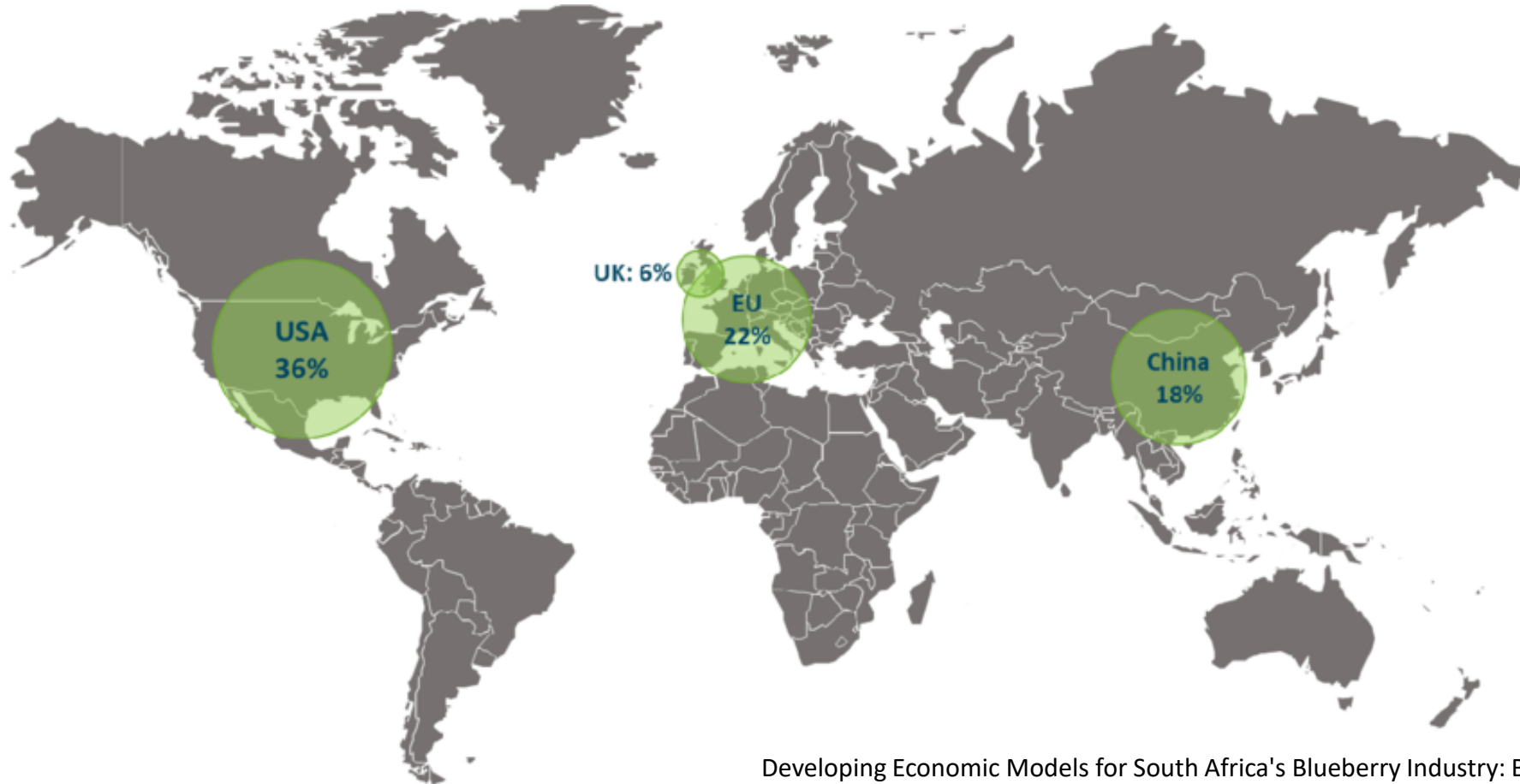


Source: Trade Map, USDA, Rabobank estimates 2022

CONSUMPTION TRENDS

Progressive consumption growth: Global demand for blueberries has seen significant growth in recent years. Main drivers are the emergence of blueberries as a super food and convenience snack enjoyed around the world.





Developing Economic Models for South Africa's Blueberry Industry: Baseline for 2022-2031

CONSUMPTION TRENDS

The **United States** is the largest consumer of blueberries, followed by UK, Europe and Asia.

There are however significant differences in the consumption characteristics between countries, depending on the exposure to this fruit, availability and marketing.

South Africa Exports by Partner

Reporter	2018/2019	2019/2020	2020/2021	2021/2022
Netherlands	1.72	4.15	8.01	10.66
United Kingdom	4.40	5.69	6.82	6.08
Germany	0.62	1.17	0.49	1.15
UAE	0.09	0.20	0.56	0.78
Spain	0.23	0.40	0.41	0.65
Others	1.01	1.46	2.00	2.51
South Africa Totals	8.07	13.06	18.29	21.83



INSIGHT ON THE SOUTH AFRICAN EXPORT MARKET

The **main export market** for South african Blueberries remains **Europe** and **UK**, but with a greater importance of far East markets.



Domestic consumption is **growing** due to increasing demand from health-conscious consumers even if blueberries are still perceived as an exotic fruit and perceived as very expensive to the majority of consumers in South Africa

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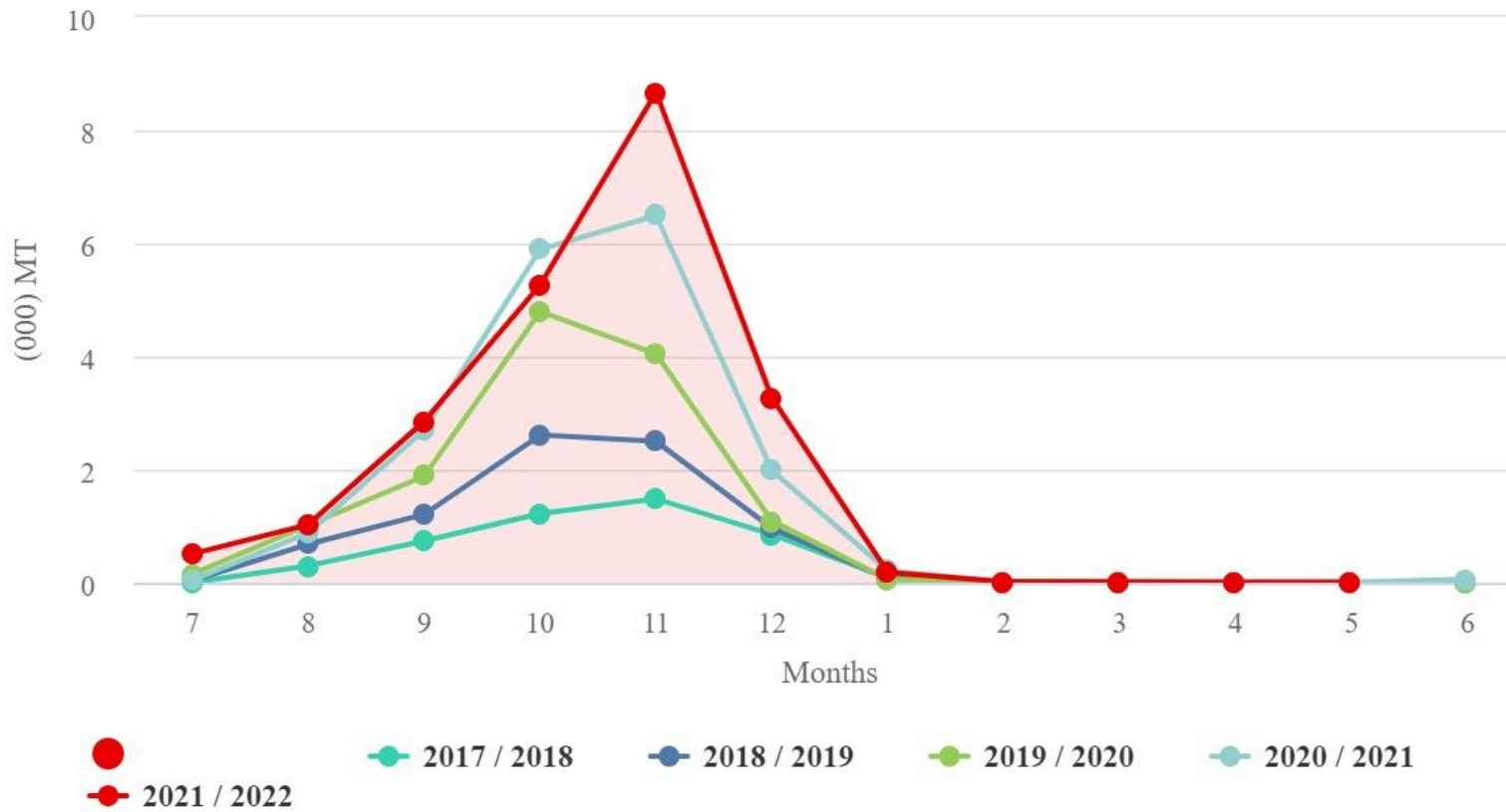
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Source: Various via Agronometrics

SEASON LATE PEAK

The industry had been experiencing a late season with the **peak supply season** moving **one month later**, meaning that the bulk sales months would be November and December – in direct competition with fruit from other supplying Countries.



LOGISTICS

The industry has already been severely affected by **operational problems** at the country's **ports** due to outdated and out-of-service infrastructure, inefficient systems and staff shortages. Delays in shipments have consequently **affected the quality of** berries reaching international markets, causing product rejection rates by receiving customers to skyrocket to an unprecedented quarter of a billion rand last year



NEW MARKET ACCESSIBILITY

2021-2022: more than **70%** of blueberries are exported, mainly to the Netherlands and the United Kingdom.

In 2012, China granted market access to blueberries from several countries, including Chile, Mexico, Uruguay, Canada and Peru, but is still inaccessible for South African blueberries.

Risk of losing a chance?

- **CONSUMER SATISFACTION AND ENVIRONMENTAL CONCERN**

Consumers are more **careful** about the supply chain of what they eat and the **impact of their purchasing decisions**. They are more informed and have become more demanding, with higher expectations.

- **WORKFORCE SHORTAGE**

Scarce availability of workforce willing to work shifts puts further stress on Packing houses.

- **GLOBAL AVAILABILITY**

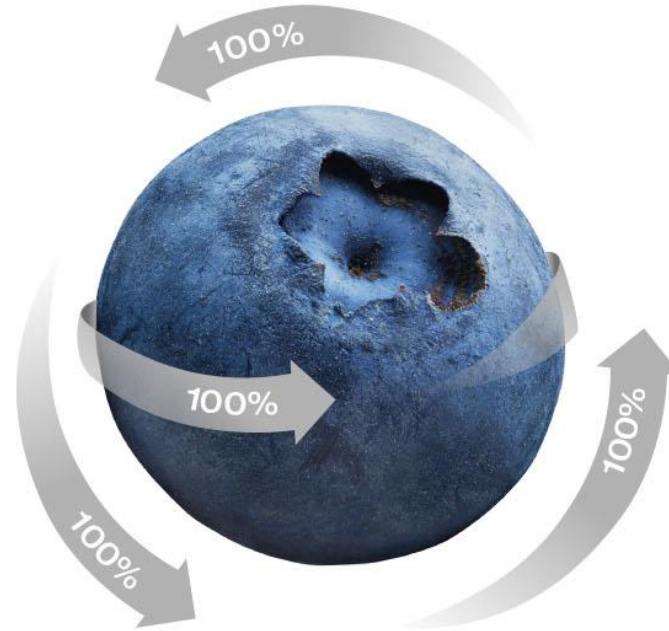
Blueberries as a global product: travel long distances to be available on consumers' tables all year round.

How can technology support the industry?



BLUEBERRY INDUSTRY CHALLENGES





INNOVATION & TECHNOLOGY: THE RIGHT PARTNERS!

Inspection of **100%** of the surface of the fruit to achieve the most accurate quality selection of blueberries.

Consistent Quality in the selection of blueberries gives the final consumers the best possible experience.



CONSUMER SATISFACTION DRIVES DEMANDS

Knowledge and continuous education raise awareness.

Technology makes the difference in giving the right value to every fruit.

Sorting solutions have been developed to guarantee that final consumer expectations are met with a product well balanced in price and quality.





CLASSIFICATION

Technology allows to segregate our blueberries into different classes and to deliver the best fruits for each single market.

Nothing is left to chance thanks to an **efficient and complete sorting of the qualities: external quality, shape defects, softness** in addition to **optical size and color**.



YESTERDAY



TODAY with

BLUEBERRY VISION 2
Unitec Technology

BLUEBERRY VISION 3
Unitec Technology

MEET CONSUMER EXPECTATIONS

Technology help us in giving a real answer to the increasingly strong need to **combine** “beautiful” with “good” to offer the final consumer blueberries that look good, but also, and above all, taste good!!

Technology today enables users:

- to detect the **sugar content** of the fruit;
- to select every **single fruit, in a non-destructive way**;
- to offer consistent **quality** and **taste** over time.



Blueberries are one of the few fruits that can go from the tree to the tables of final consumer without ever being touched. This is possible thanks to the **automatization of some operational processes** like harvesting, sorting, packing, etc.

This means **minimizing**:

- ✓ **Damages** to the fruit
- ✓ **Contamination**
- ✓ **Labor costs**

A fully automated process requires a reliable technological partner with a solid background, strong commitment to continuous innovation, and a reliable service to avoid any interruption to production.



PROCESS AUTOMATION AND MECHANIZATION



OPTIMIZE THE PRODUCTION PROCESS: PRE-GRADING

Technology once again provides solutions connected with market need to solve the problems related to **mechanically harvested** blueberries:

PRE-GRADER

This solution is applied before the electronic sorting and eliminates **leaves, green fruits, foreign bodies and clusters.**

Pre-graders considerably improve the **efficiency** of the line by increasing **accuracy** and performance.



OPTIMIZE THE PRODUCTION PROCESS: PACKING AUTOMATION

- Possibility of **Direct Packing** thanks to the connection to **automatic punnet fillers**
- **Automatic box fillers**, equipped with computerized interface and load cell, to fill with **pre-determined weight** different format of carton boxes
- **Volumetric box fillers** for **pre-sorting lines**
- **Exit management automation** to **redirect the flow** of the fruit in case of excess of fruit or punnet filler stop (label change, format change, etc)





TRACEABILITY

UNITEC traceability system, in communication with the existing ERP system, can manage the information regarding the **incoming lot**, the **fruit tracking** during the sorting and grading process, the **labelling** and **palletizing** activities and can provide a **detailed run report**.

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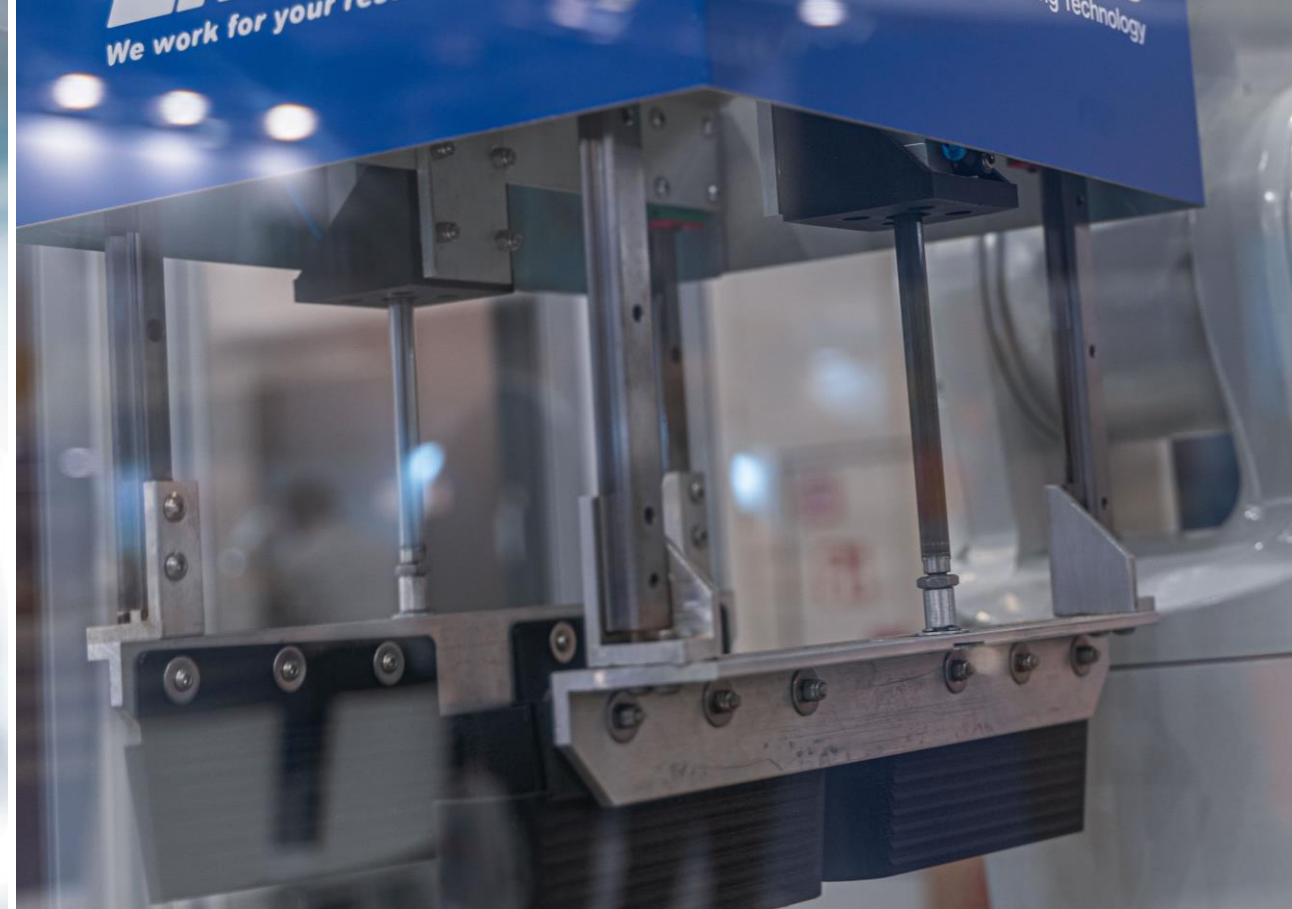
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ANTHROPOMORPHIC AND GENTLE AUTOMATION

Intelligent robotic solutions, provide a **new and efficient technological response** to the needs of packing houses to work faster and with **greater precision**. The use of anthropomorphic and non-anthropomorphic robots also allows for significant **cost reductions**.



INNOVATION IN ALL PHASES OF FRUIT PROCESSING

End Line Automation: **SEGREGATION** and **PALLETIZATION**, where automation helps packing houses to reduce costs and improve performances during these phases



BIG DATA ANALISYS

Choosing the right partner allows to access global insights on productivity of your market of interest.

It is also key to finding efficient solutions for constant improvement and growth.





THANK YOU! FOR YOUR ATTENTION.