

It's Fresh!



Zintinus Food Tech Summit
2026

February 2026.

Global agriculture produces more than enough calories for every person on earth

The world currently grows enough food to provide **2,900–3,200** calories per person per day.

However ... we lose or waste an estimated **1.3 billion tons of food every year.**



This wasted food contains enough calories to feed 2 billion people—nearly 2.7x the number currently facing hunger. We don't have a production problem, we have a food systems problem.

It's Fresh!

Sources:

- Food and Agriculture Organization (FAO)
- World Resources Institute
- FAO, State of Food Security and Nutrition in the World 2023



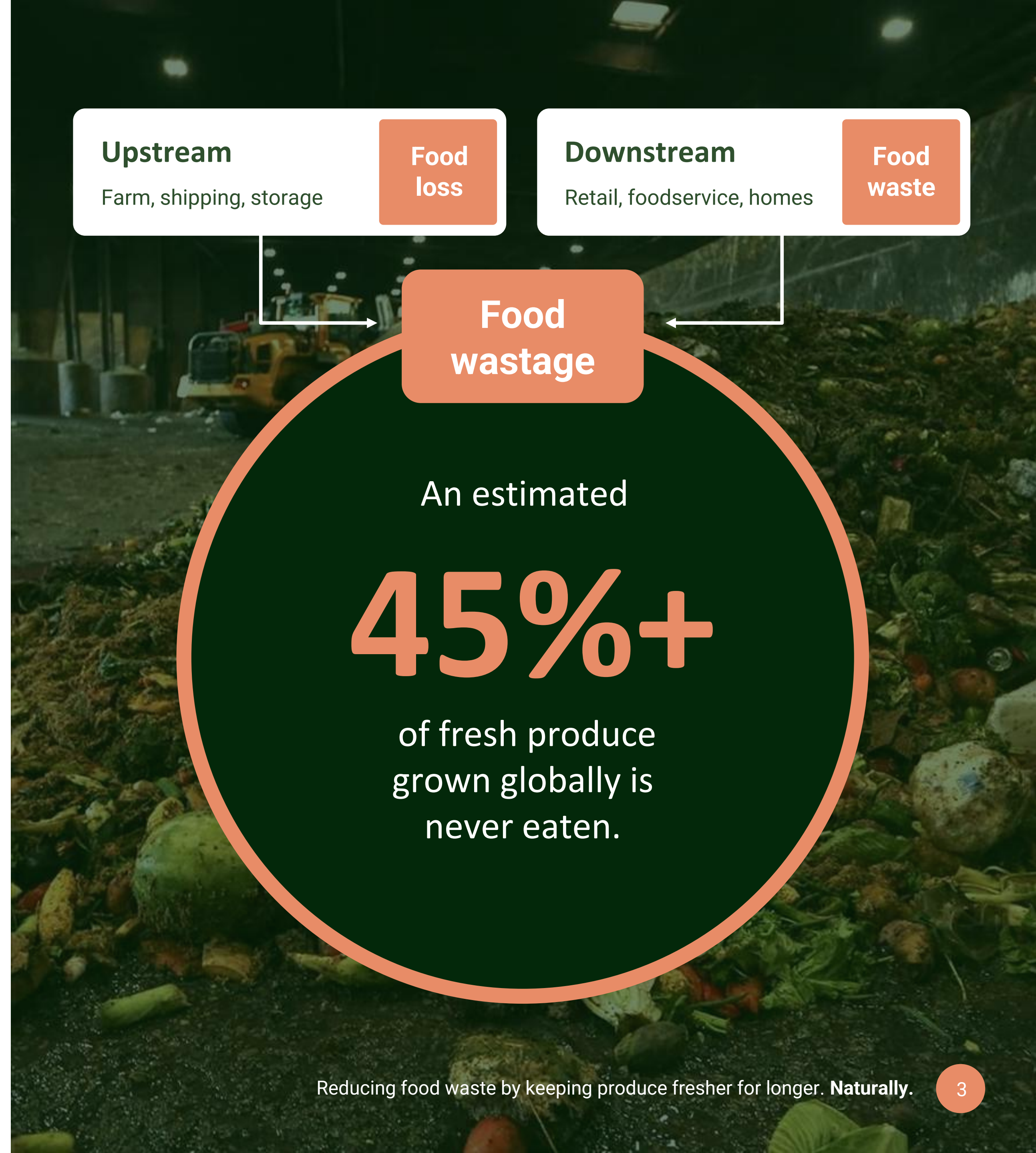
Fresh produce fails across the entire journey from farm to kitchen.

Ripening never stops after harvest

Post-harvest, **time, temperature & handling** all steadily erode value ... even before the produce reaches the consumer.



- Sources:
- Our World in Data
 - FAO, US Government
 - WRAP UK



Reducing food waste by keeping produce fresher for longer. **Naturally.**

60% of this loss happens upstream, before produce reaches the retail shelf

This failure is one of the largest avoidable climate & economic costs in global agriculture



Sources:
• Our World in Data
• FAO, US Government

The remaining 40% is wasted downstream

In retail and in homes, compromised product becomes waste further amplifying the climate & economic impact



Retailers can lose **10%+**
on shelves through
waste



Poor eating quality
= **hidden waste**
in consumers' homes



UK homes throw **>£4bn**
of edible fresh produce
in the bin every year.
In the US, it's **>\$60bn**

**Food waste
often**

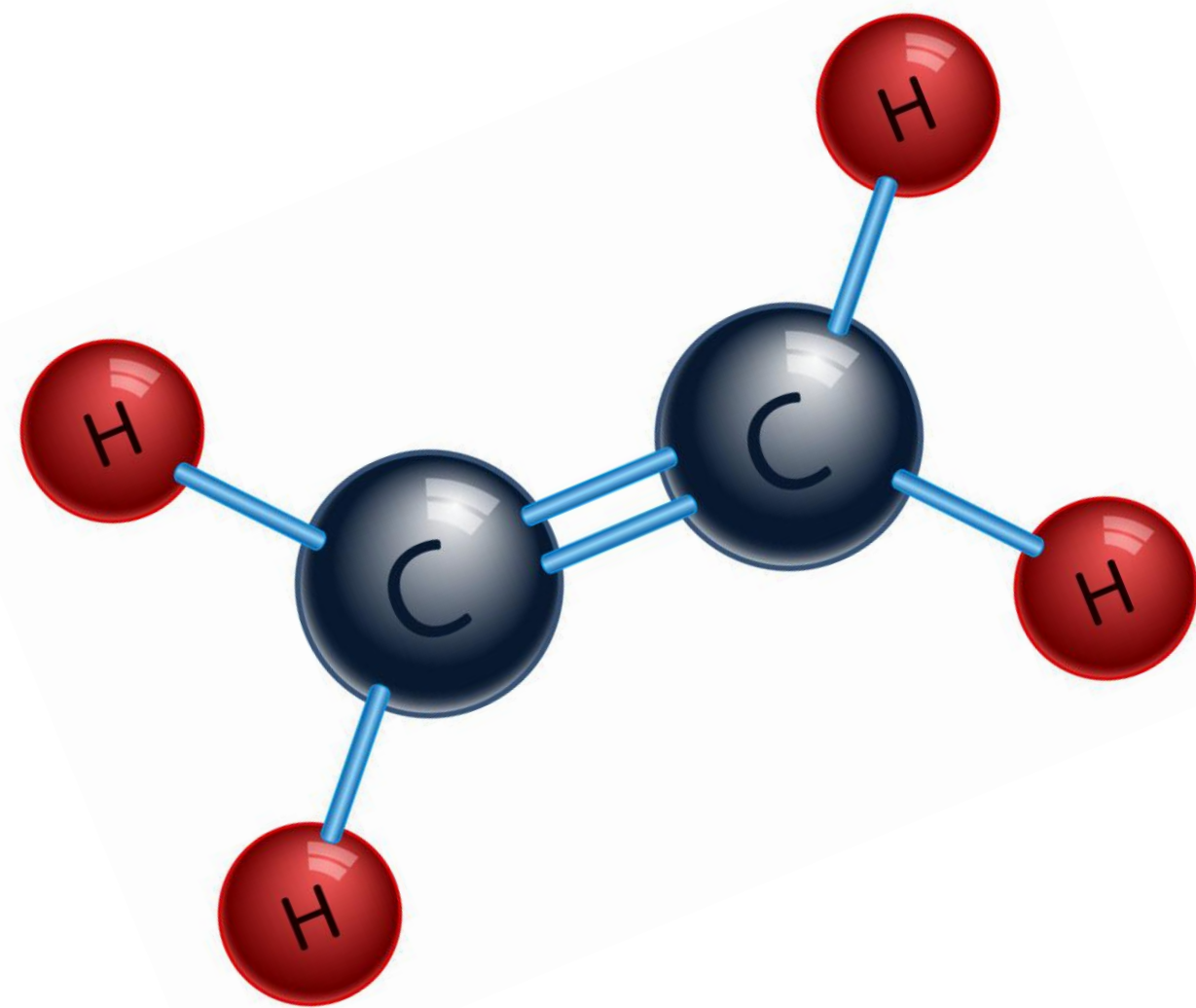
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**Packaging
waste too**

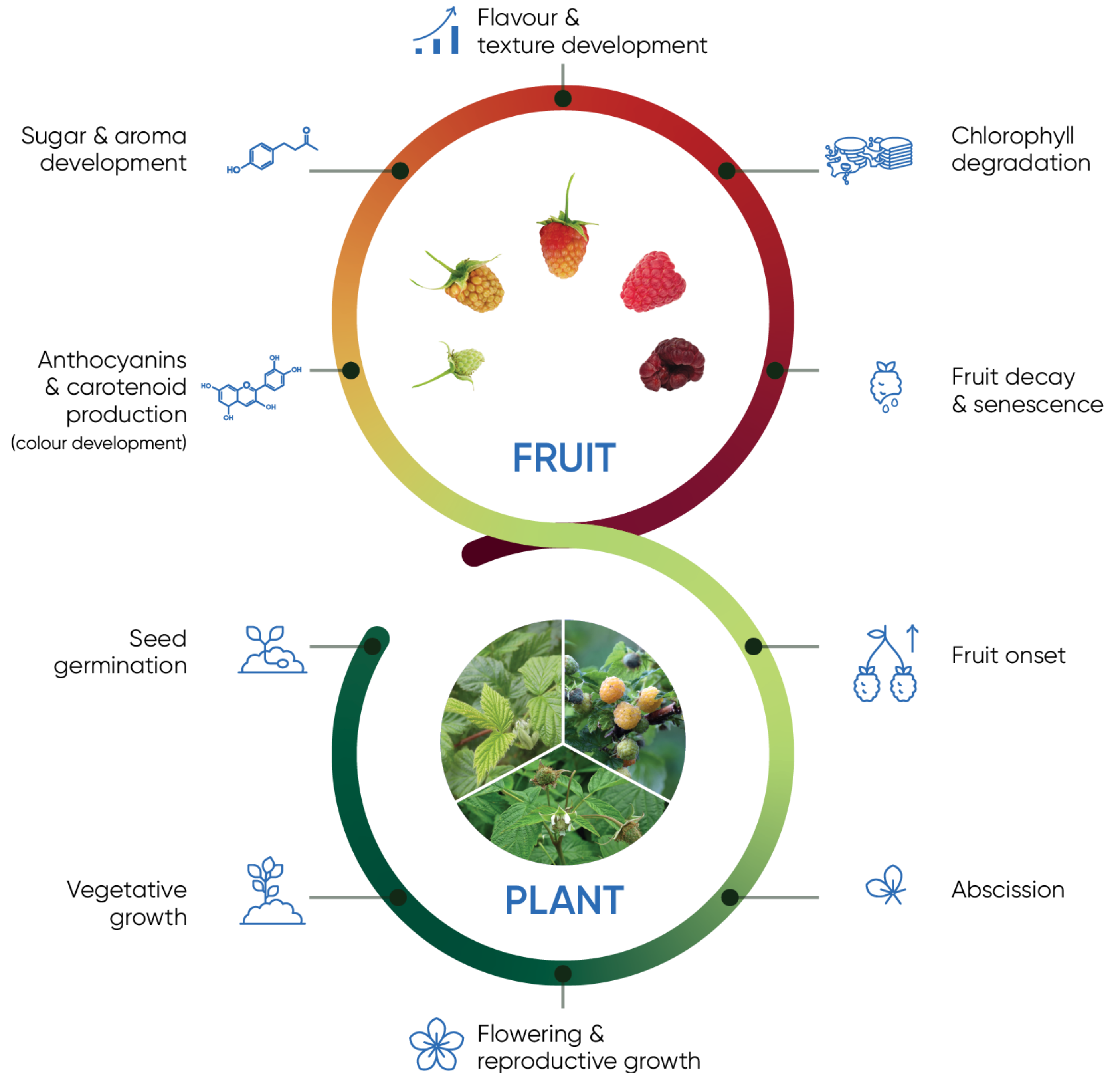
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Ethylene—nature's conductor of the orchestra.



It's Fresh!



The industry has tried many ways to control ethylene's effect.

PREMATURE HARVESTING



- Harder fruit = reduced risk of damage + spoilage in packing + transit.
- However, **significantly less flavour and aroma is now likely to develop** post-harvest.
- The **true potential of the fruit is never realised**, and consumer experience is sub-optimal.

AGRONOMY



- Improved **sweeter + better eating varieties** (+ heritage ones) more challenging for the entire supply chain.
- With higher ethylene sensitivity comes **operational waste and profitability pressures**.
- **Selective breeding** of less sensitive fruit has sought to resolve waste issues but often **results in less enjoyable eating experience**.

LEGACY ETHYLENE CONTROL



- **1-MCP** - significant impact on taste, aroma development, and inhibits natural ripening.
- **KMnO₄** - non-selective, inefficient, low capacity, toxic, and activates slowly until moisture accumulates.
- **Activated carbon** - highly inefficient, non-selective, low capacity

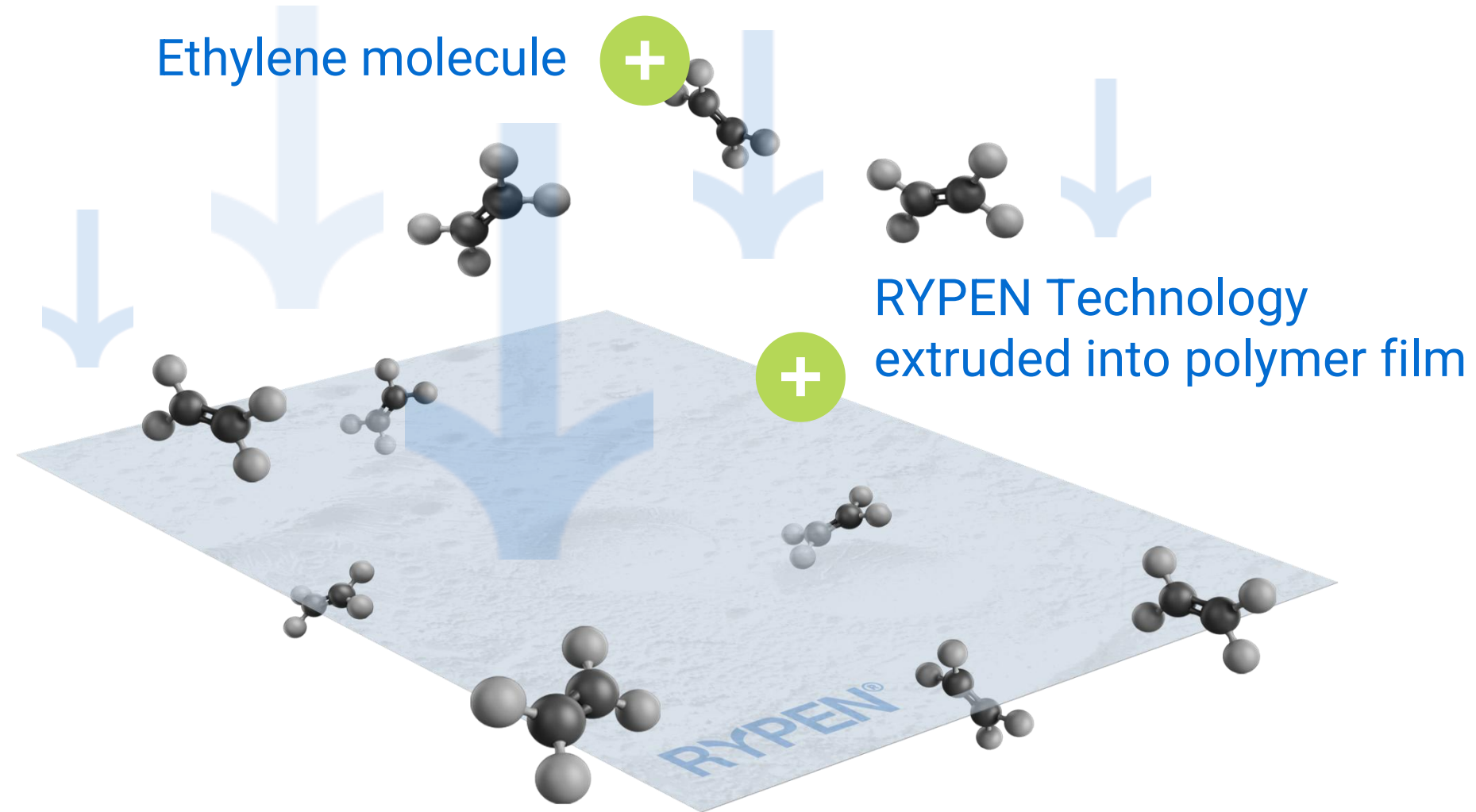
COATING



- Focused on **dehydration** not ethylene
- Involves additional processing step and CAPEX

Our proprietary technology

RYPEN[®]



Link to RYPEN website

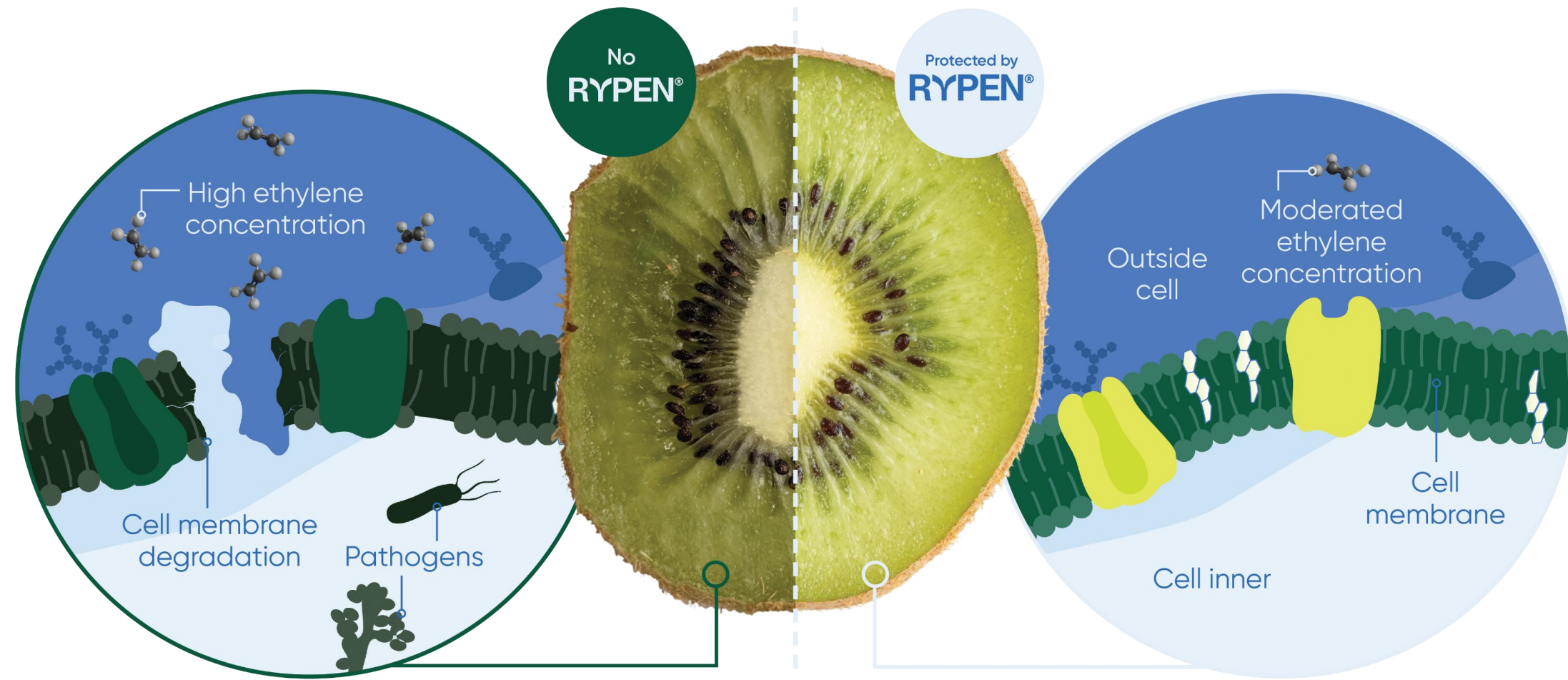


Captures excess ethylene – the natural molecule that accelerates ripening – before it degrades produce.

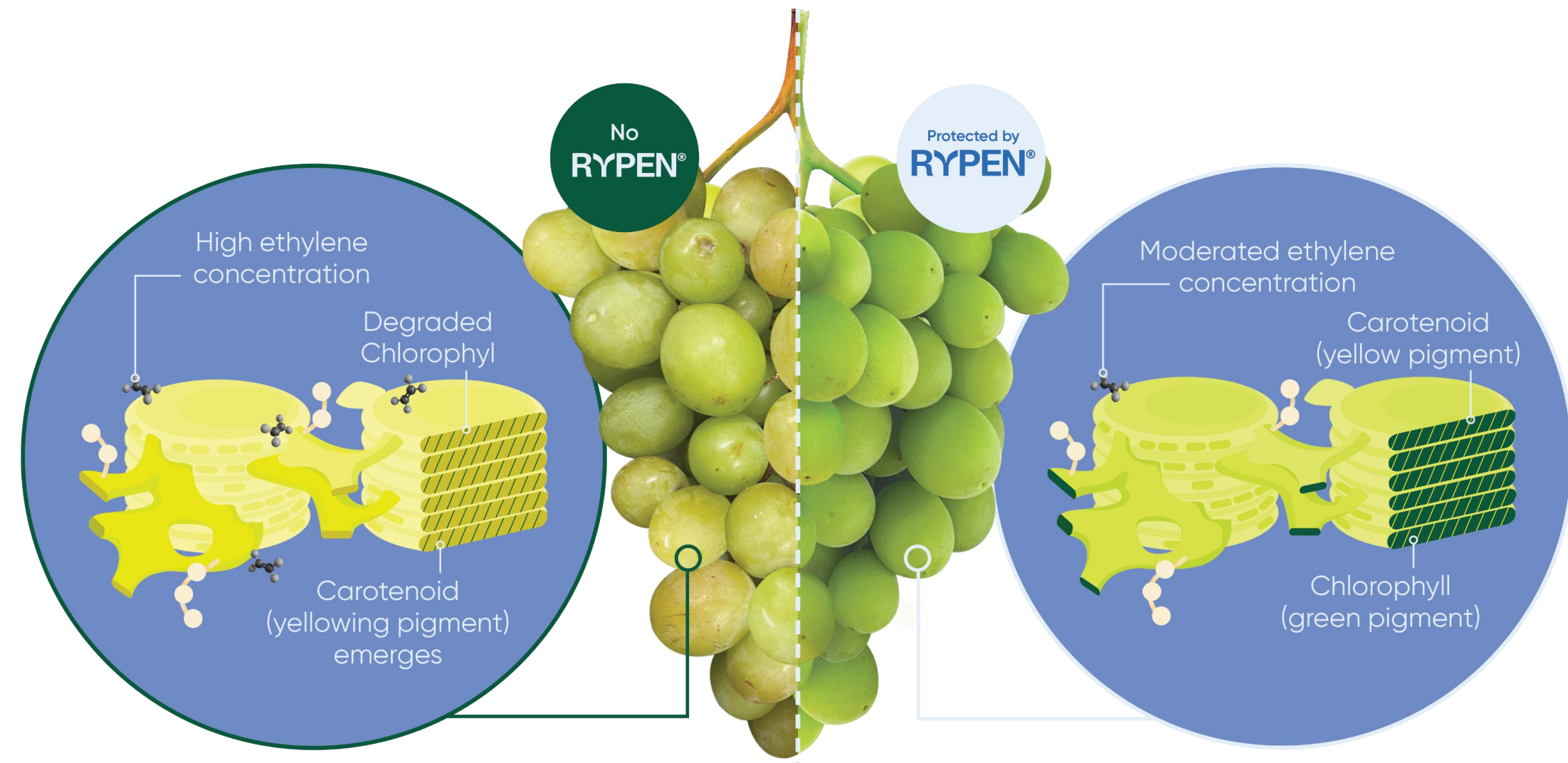
Extending freshness, improving arrival quality & dramatically reducing waste

Ethylene is both friend and foe. Moderation is the key

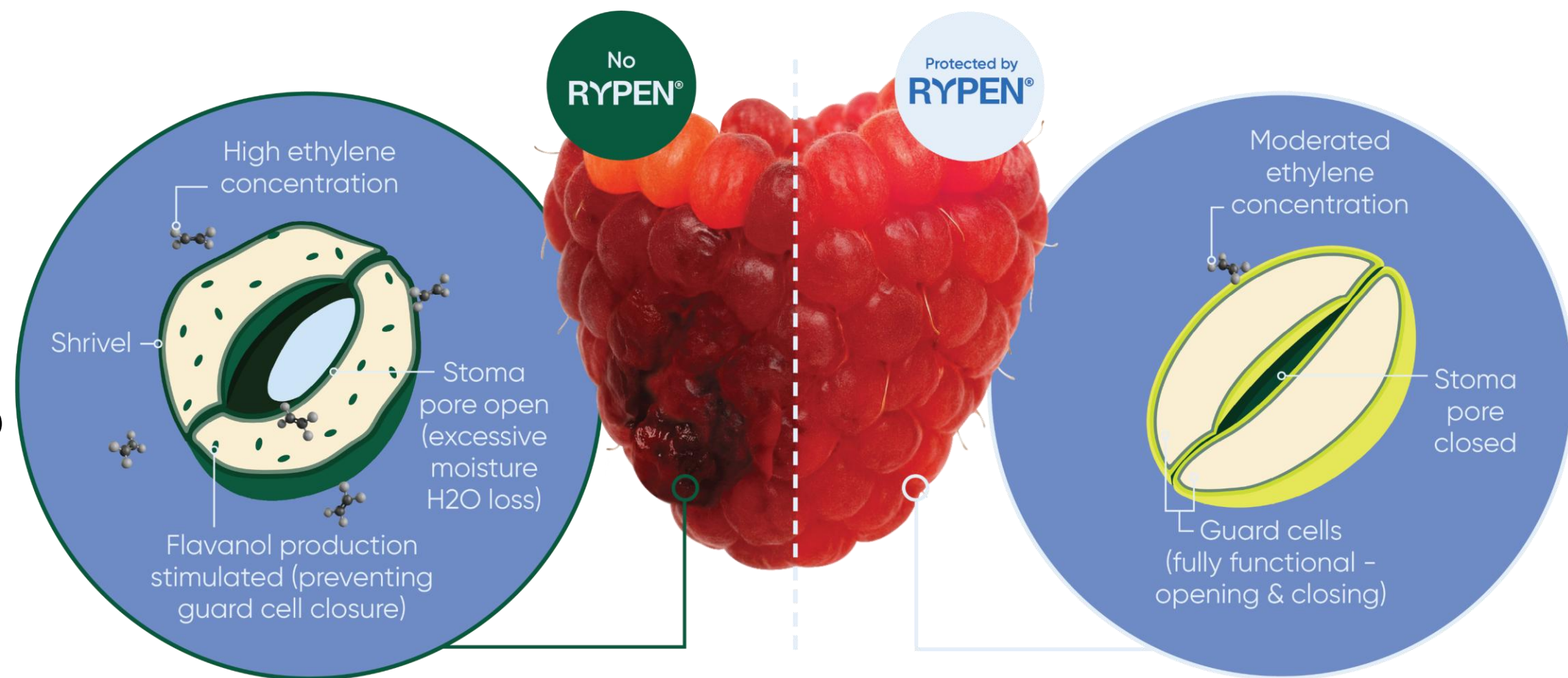
Onset of rots & moulds



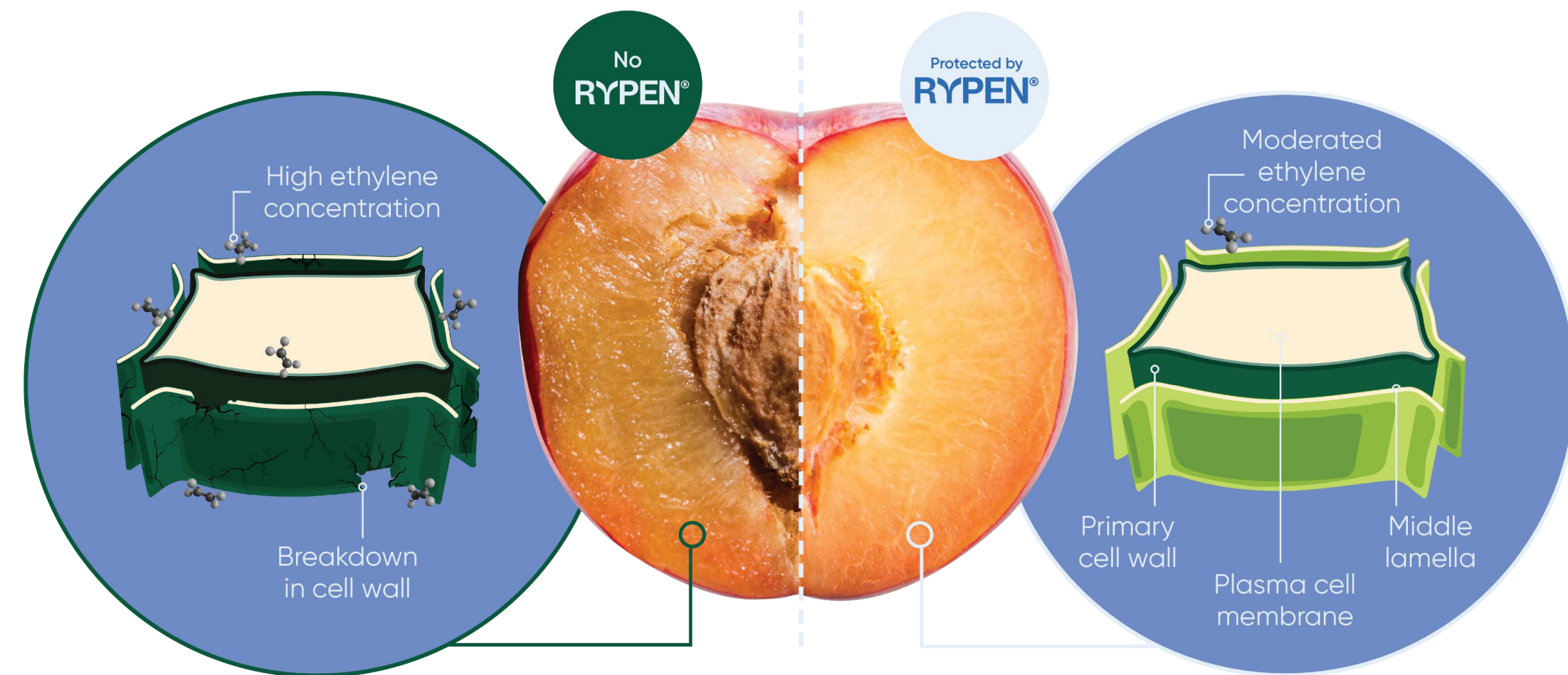
Breakdown of vibrant colours



Dehydration and weight loss

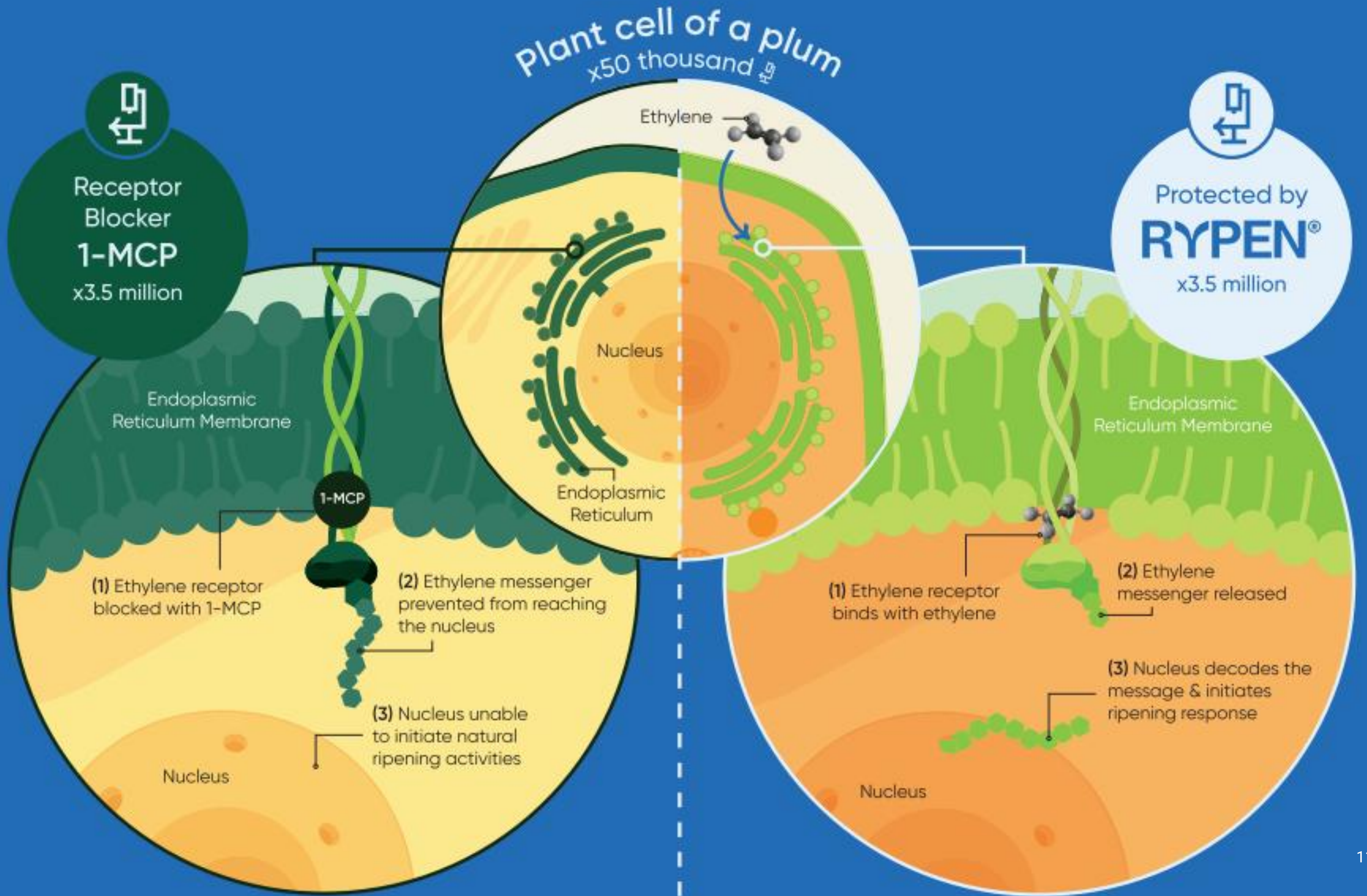


Loss of pressure and softening flesh

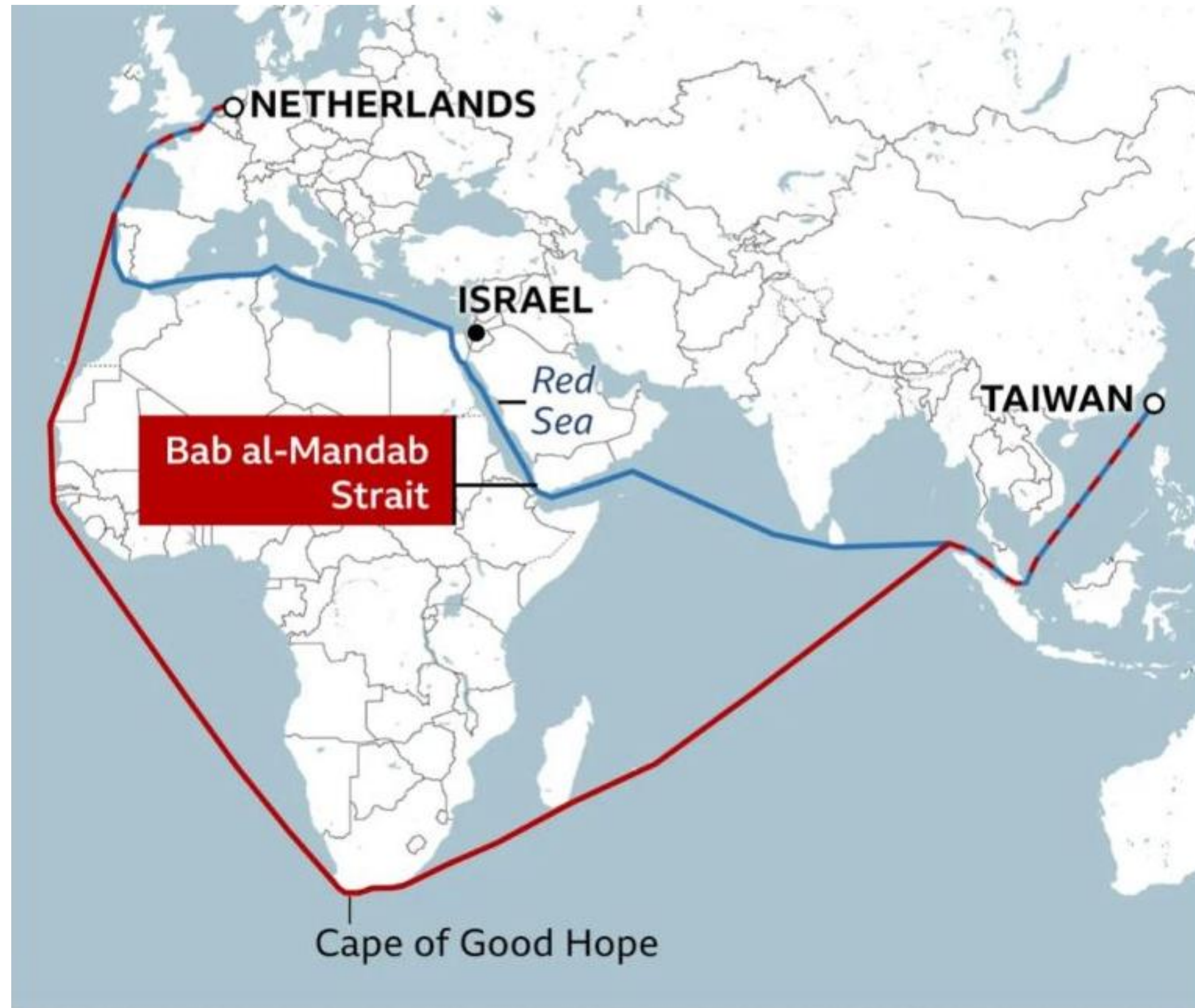


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#rubberyfruit



Supply chains are getting more challenging.



Using the Red Sea / Suez Canal

10,000 nautical miles
(18,520 km)

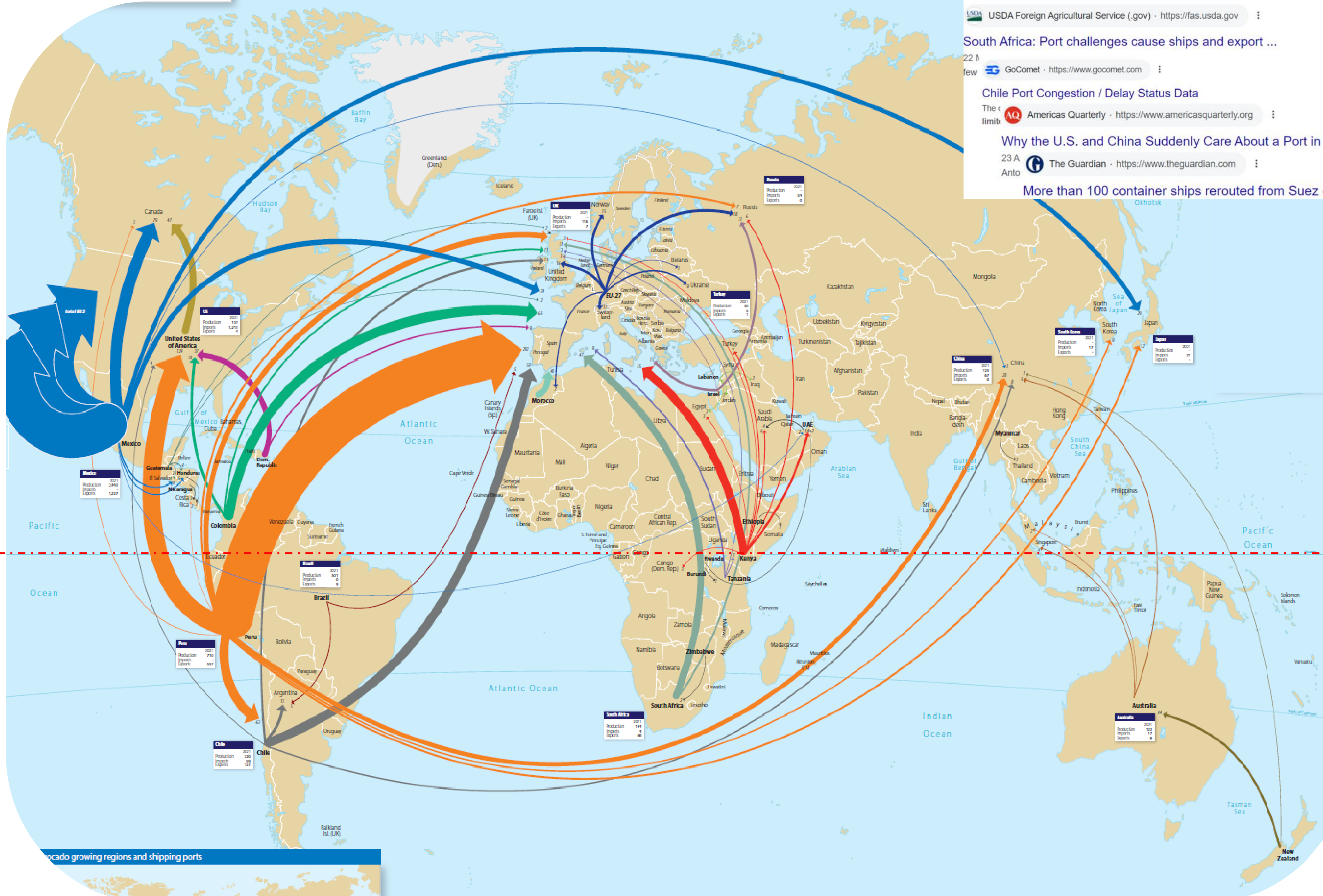
25.5 days

Around the Cape of Good Hope

13,500 nautical miles
(25,002 km)

34 days.

*based on ultra large container vessel's average speed of 16.48 knots



90% of the world's population lives north of this line

It's Fresh!

avocado growing regions and shipping ports

Our products in the market today, with further formats under development.

Supply Chain

Retail



Range
~20-60
days

RYPEN®
Leaf



Range
~20-60
days

RYPEN®
Liner



+3 days
shelf life

RYPEN®
Pad



+3 days
(or more)
shelf life

RYPEN®
Films



Recyclable
(compostability
potential)

RYPEN®
Coating

In development

Over 2 million kgs of fruit saved in 2024 & 2025

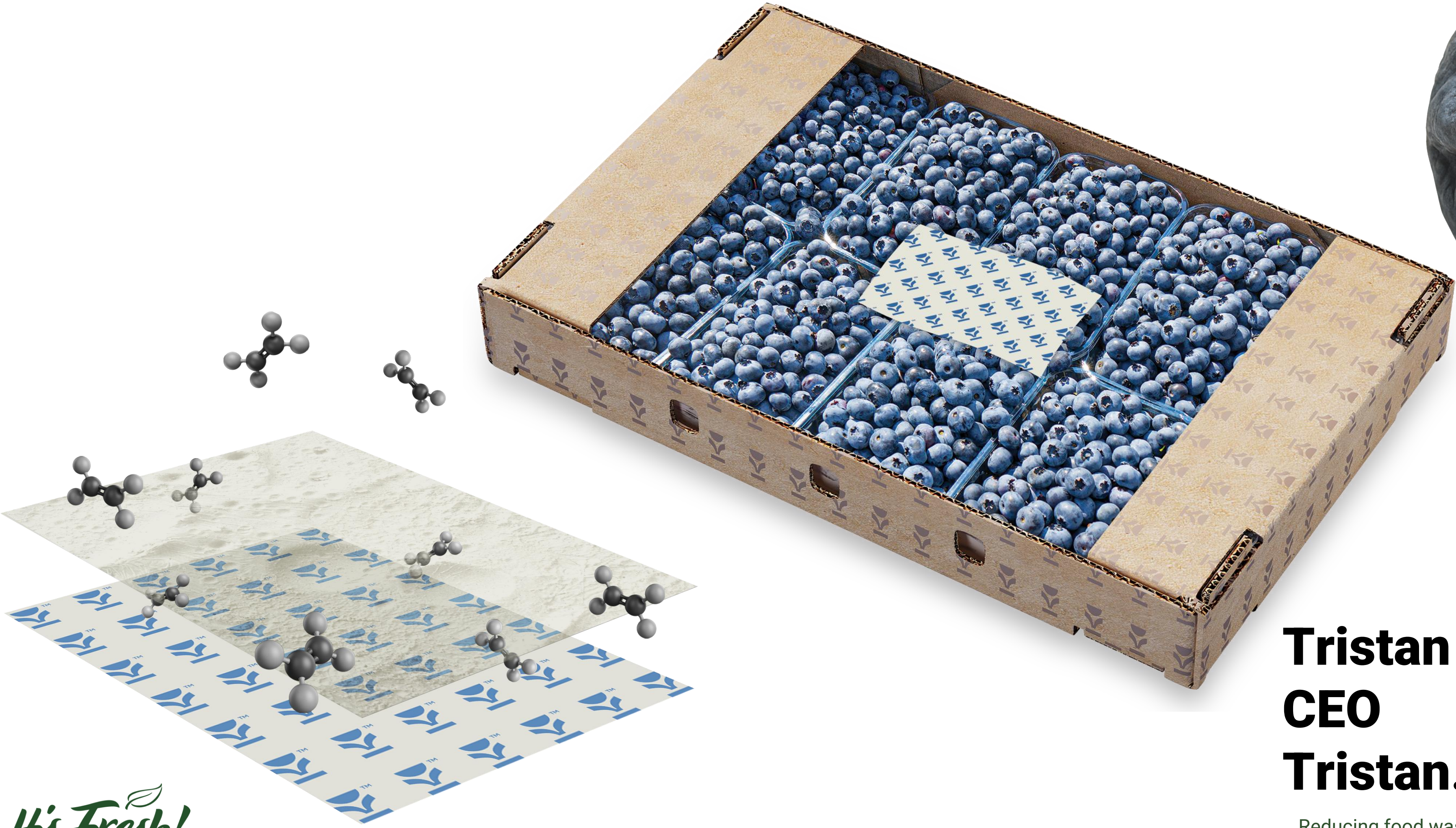


With
RYPEN[®]

It's Fresh!

Reducing food waste by keeping produce fresher for longer. **Naturally.**

Driving a future for active packaging with even greater purpose.



No
RYPEN[®]



Protected by
RYPEN[®]

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Reducing food waste by keeping produce fresher for longer. Naturally.

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