

Growth Under Pressure

Protective Covering to Focus on Maximizing
Timing & Quality on Berries

Haygrove



Crops Covered

Crops

- Berries – Blueberries biggest
- Tree crops – Apples / Citrus / Cherries
- Vegetables – Tomatoes / Peppers / Chilies / Leafy greens
- Nurseries
- Kiwi fruit
- Other – Aquaponics / flowers / crocodiles / bricks / cannabis / salt / Grapes



ROI is Critical !

- Yield
- Quality
- Timing
- Reduce risk
- Maximize your climate zone
- Market – price



Increasing challenges to growing high quality crops

- Temperature / frost / heat
- Rain (Too much / not enough / wrong time)
- Wind
- Hail
- New pests
- Disease pressure
- Carbon Footprint
- Eskom!

temperature

- Out of season production
 - Building of heat inside a tunnel
 - Reduce the frost risk
 - Produce closer to the market
 - Build up of humidity to reduce heat stress
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Water / Rain

- Out of season rain can be devastating to unprotected crops
- Capture water off greenhouses – gutters
- 1mm rain on 1ha = 10 m³ = 10 000 litres
- Crops use less water beneath shade net
- Build up of humidity reduces evapotranspiration



Wind

- Stronger / More frequent / out of season
- Wind chaffing resulting in drastic reduction of 1st class fruit
- Blowing fruit off trees
- Dry hot winds = increase in evapotranspiration = stress

SHADE NET STRUCTURES

Structural engineering to guarantee strength against winds





hail

- More frequent?
- Out of season
- In areas not traditionally associated with hail

New pests

Eg: Tuta absoluta – insect net
Biological control – better climate to
control



Disease pressure

- Biological control
- Input costs increasing
- Consumers want less chemicals
- PSA in Kiwis – preparing for rain protection



Eskom

- Natural ventilation vs pad and fan
- Solar to run pad and fan is challenging!

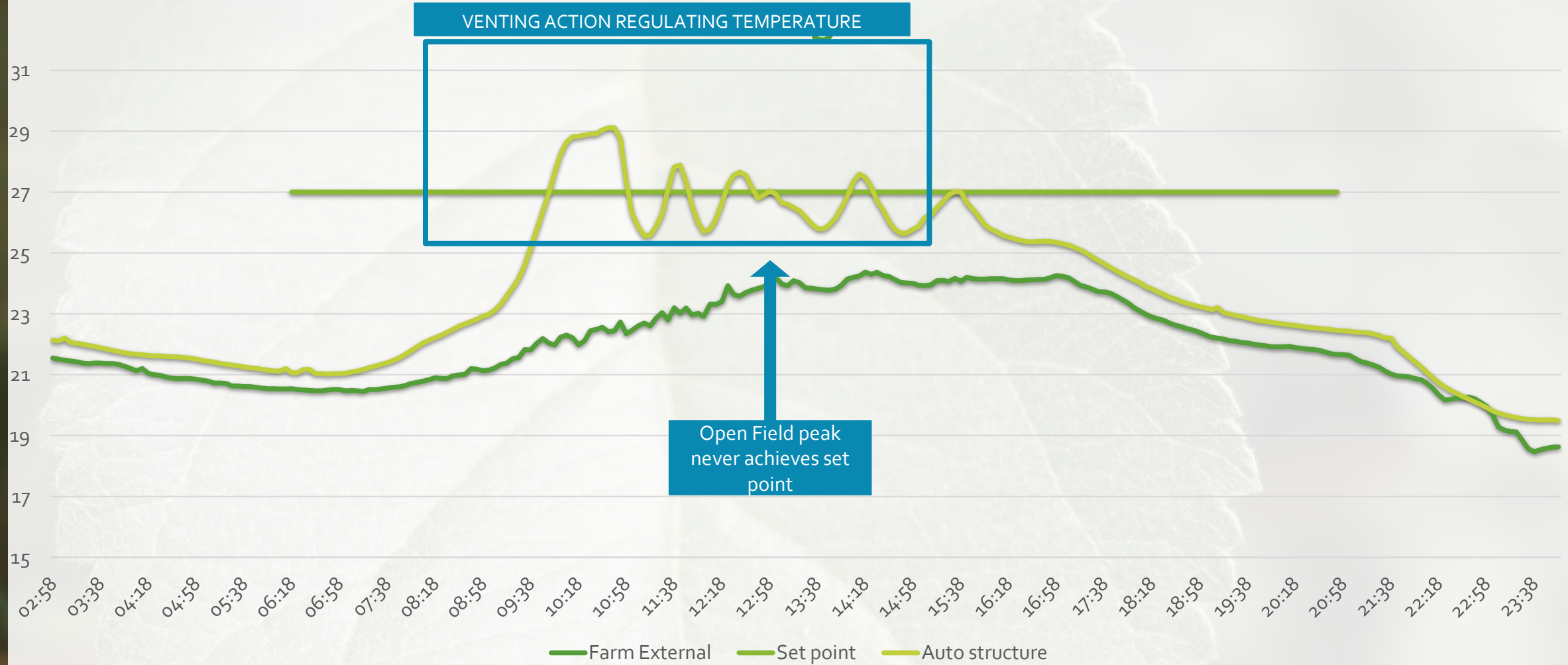


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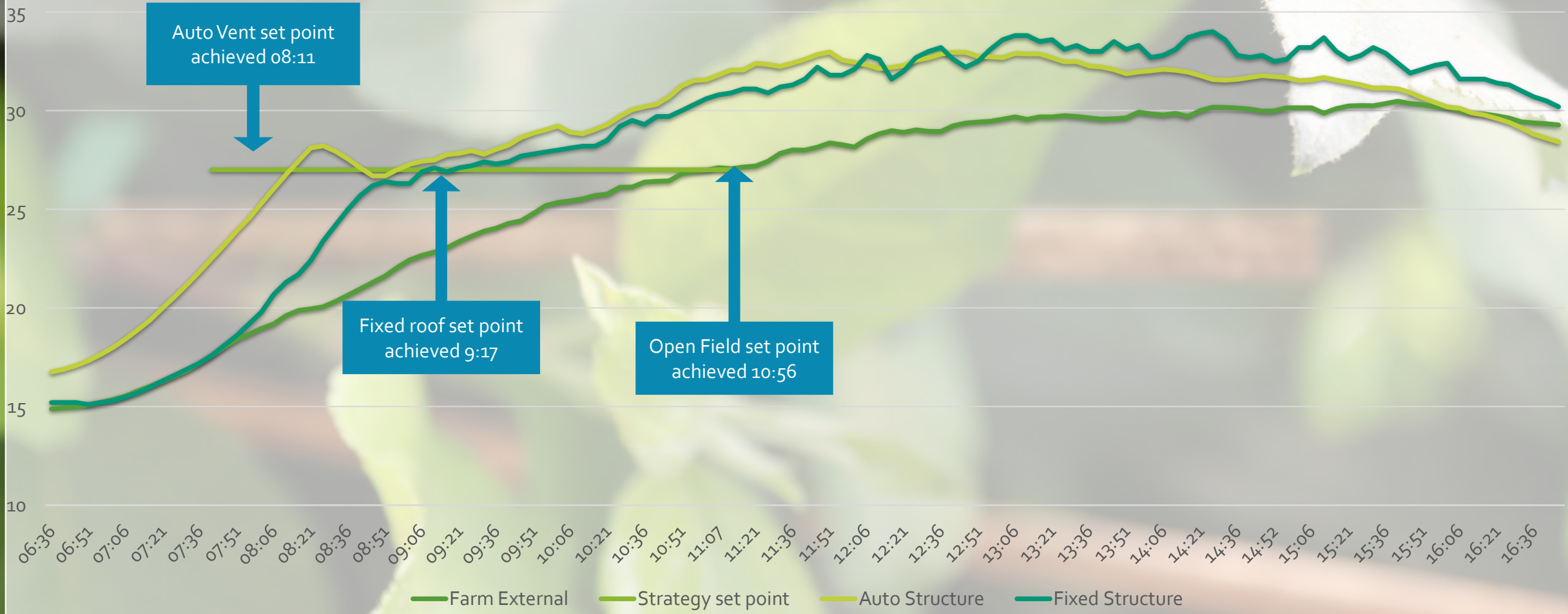
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Haygrove

Typical venting day when external temperature is lower than



Temperature comparison for the external farm, internal automated structure and internal fixed roof



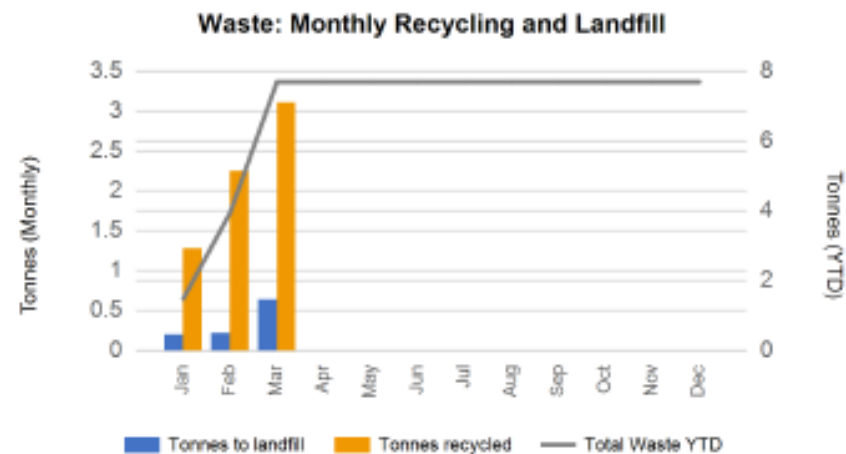
Carbon footprint

- Grow closer to the market
 - Less area to produce more
 - Horti-planet
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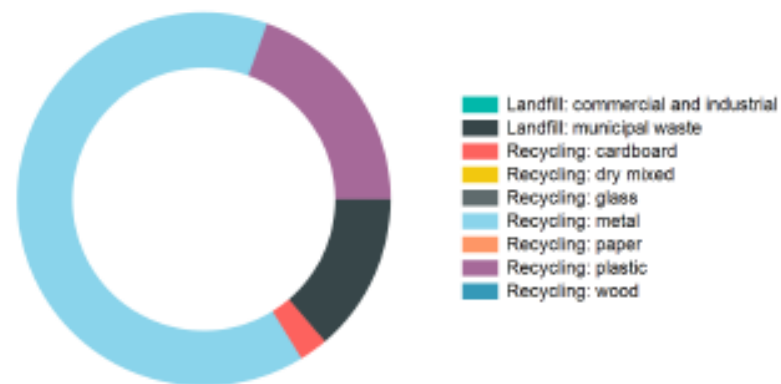
WASTE REPORT

HAYGROVE / GROWING SYSTEMS / GS SOUTH AFRICA, MARCH 2023

		This month	YTD	% change from baseline
Landfill: commercial and industrial	tonnes	-	-	N/A
Landfill: municipal waste	tonnes	0.64	1.06	N/A
Recycling: metal	tonnes	2.29	4.95	N/A
Recycling: glass	tonnes	-	-	N/A
Recycling: paper	tonnes	-	-	N/A
Recycling: cardboard	tonnes	0.11	0.19	N/A
Recycling: plastic	tonnes	0.71	1.50	N/A
Recycling: dry mixed	tonnes	-	-	N/A
Recycling: wood	tonnes	-	-	N/A
Sub Total: Landfill	tonnes	0.64	1.06	N/A
Sub Total: Recycling	tonnes	3.11	6.64	N/A
Total waste	tonnes	3.75	7.70	N/A
Recycled	%	83%	86%	N/A



Waste Categories (YTD)





Thank you!