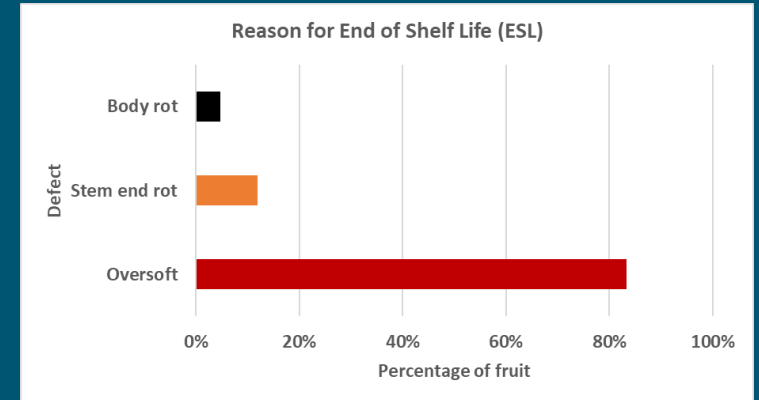




# AM21000: Serviced Supply Chains II

Honey Gold mango supply chain monitoring identifies means to improve quality and shelf life



# AM21000 Serviced Supply Chains II

*“Providing decision support to manage risks and deliver consistent quality fresh produce”*



## Target commodities:



Current and emerging cultivars of avocado, mango, strawberry and summerfruit

## Project team:



## Four components:

1. Monitor & build capacity
2. Develop shelf life models
3. Simulations & decision aid tools
4. Information resources portal



## Deliverables:

- Best practice resources
- Decision aid tools
- Case studies
- Online portal
- Business plan/EOI
- Final report



## Expected Outcomes:

- Greater knowledge, awareness, skills
- Improved supply chain practices
  - More consistent quality
  - Reduced waste



## In this presentation:

- Introduction
- Expected outcomes for Honey Gold
- What we did
- Consignment monitoring results summary 22/23 & 23/24
- Conclusion & the Next Steps





# Introduction

- Concerned about not maximizing quality and market opportunities, **Piñata** engaged the us to:
  - monitor several commercial consignments, assess & report on produce quality and develop capacity to improve practices
  - conduct detailed time by temperature trials to simulate the variation and evaluate the impact on quality and shelf life.



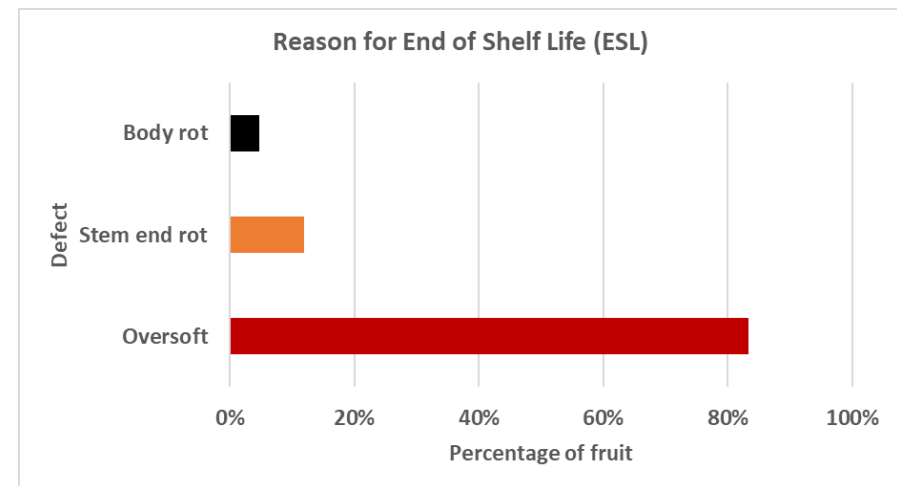
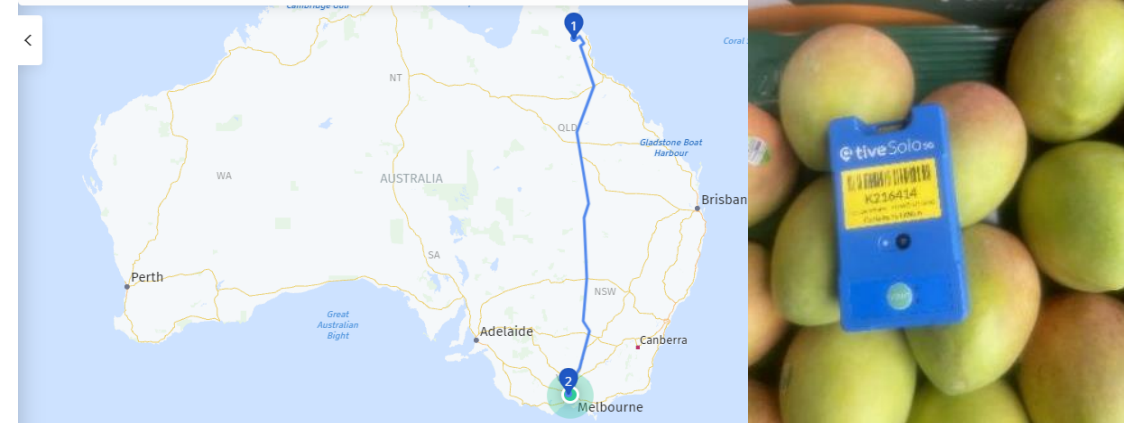
# Expected Outcomes for Honey Gold

- Monitoring tools that identify areas for improvement
- Best Practice Guidelines that increase the consistency of quality, shelf life and value of mango
- Decision aid tools to predict fruit quality & shelf life on arrival in domestic and export markets

# What we did

- Project team **monitored 34** consignments from **7 farms** (NT & QLD) over two seasons (22/23 & 23/24)

- Mangoes assessed for quality at collection and then stored at 20°C, with shelf life determined by **firmness** and the presence of **major defects**

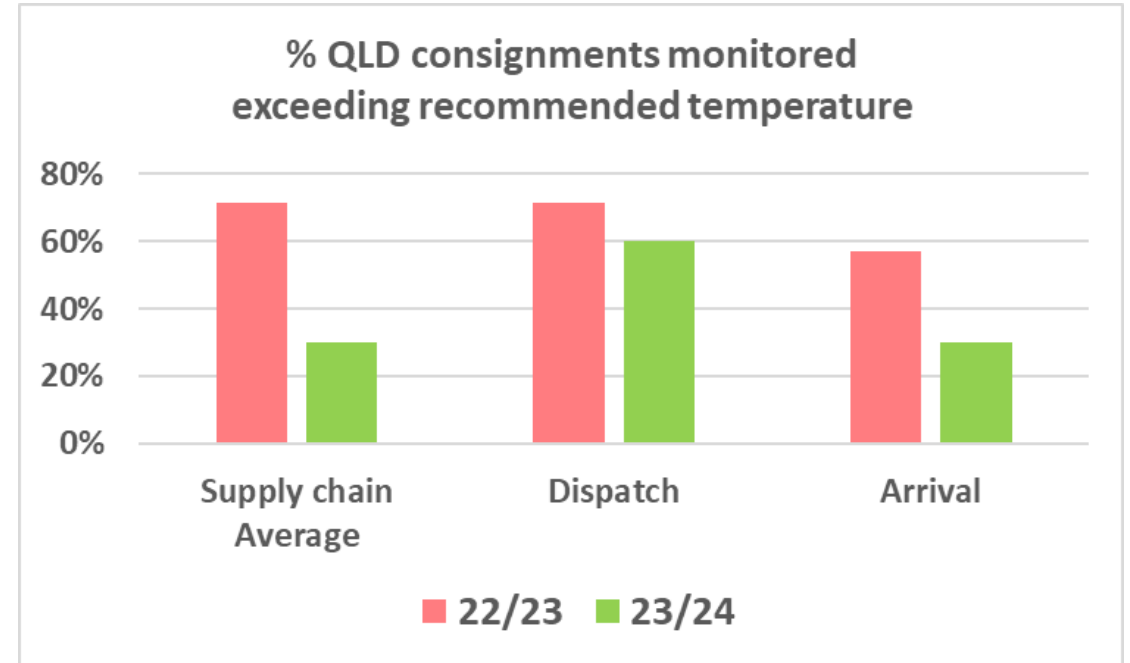
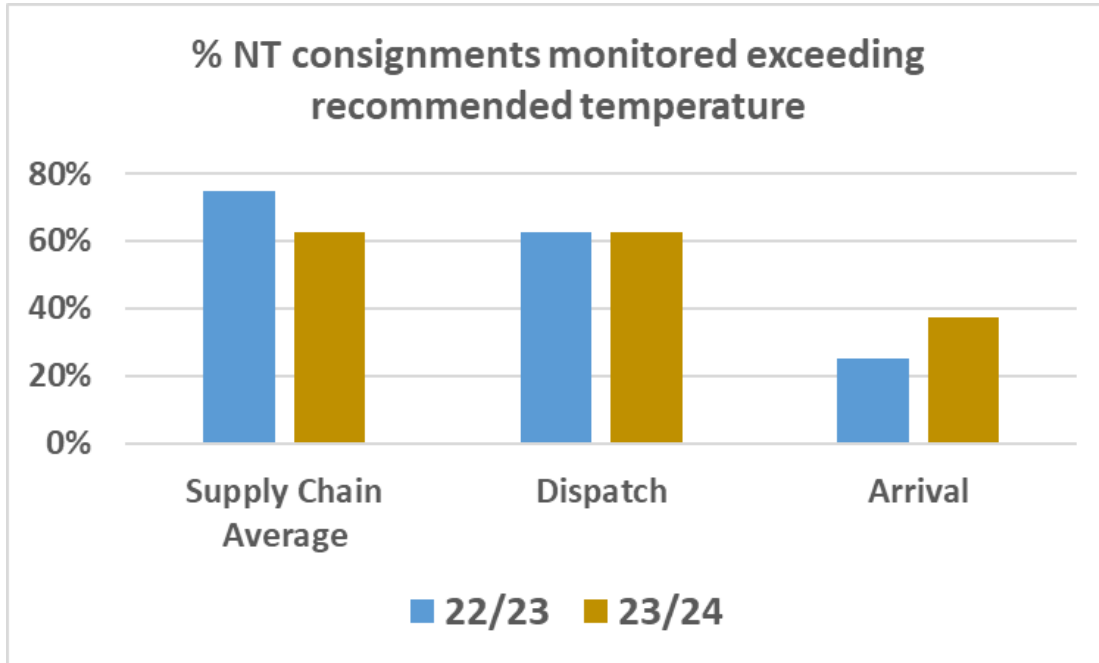




# Summary of Honey Gold Consignment Monitoring Results

Honey Gold Consignments	2022/23		2023/24	
	NT	QLD	NT	QLD
Av. temperature in supply chain (°C)	13.5 to 21	12.4 to 19.3	14.6 - 19.9	13.3 to 16.4
Days from pack to collection (Melbourne)	7 to 11	6 to 11	6 to 12	5 to 11
Av. firmness at collection (Turoni)	41-55	62 -82	49 - 85	55-82
Av. shelf life (from collection)	5 to 17 days	8 to 19 days	4 to 13 days	8 to 19 days
Main reason for End of Shelf Life	Body rot & Oversoft	Oversoft & Rots	Oversoft, Rots & USB	Oversoft & Rot (SER)

# Supply chain temperatures exceed recommended



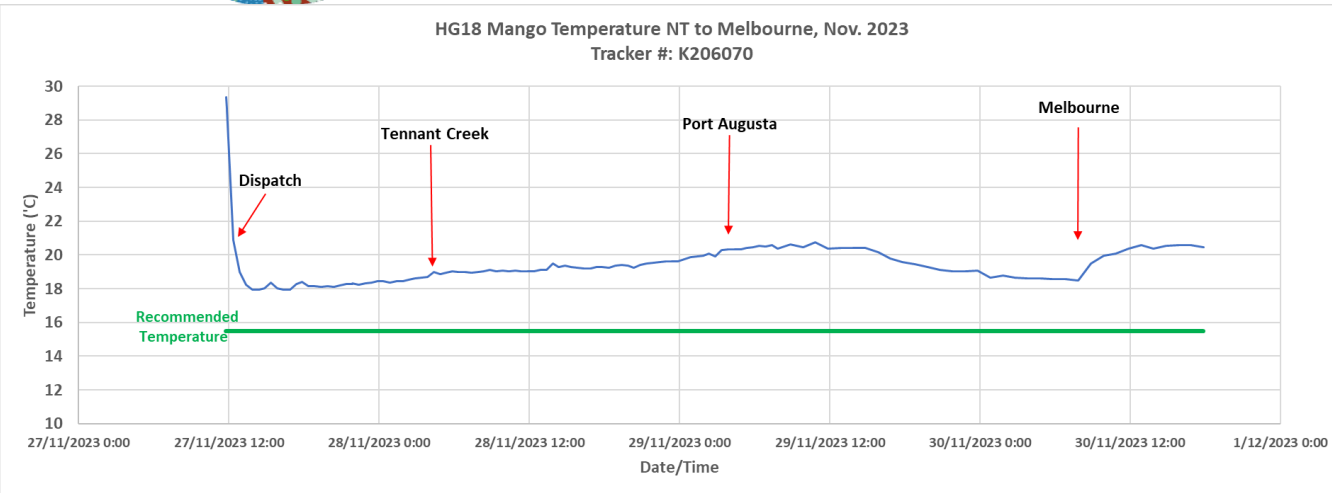
- Temperature exceedance incidence too high
- QLD showing improvement
- More effort needed to reduce temperature at dispatch



# Temperature impact on shelf life

At collection

End of shelf life



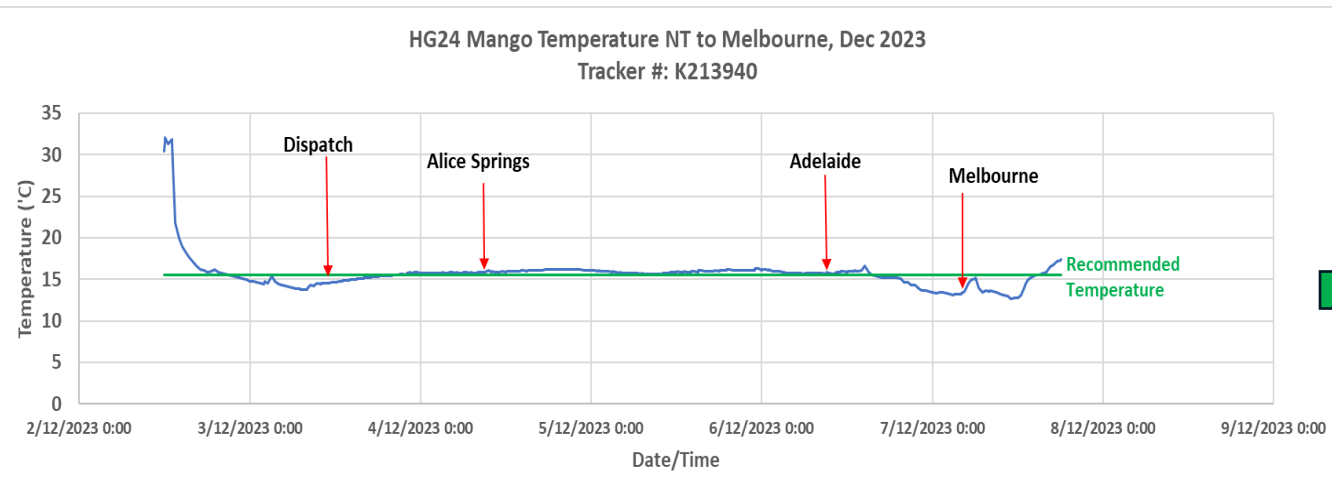
Av. Temperature 19.3°C



100% at colour stage 6 & sprung/firmsoft



Av. shelf life 4 days



Av. temperature 15.6 °C



94% at colour stage 1-2 & hard/rubbery

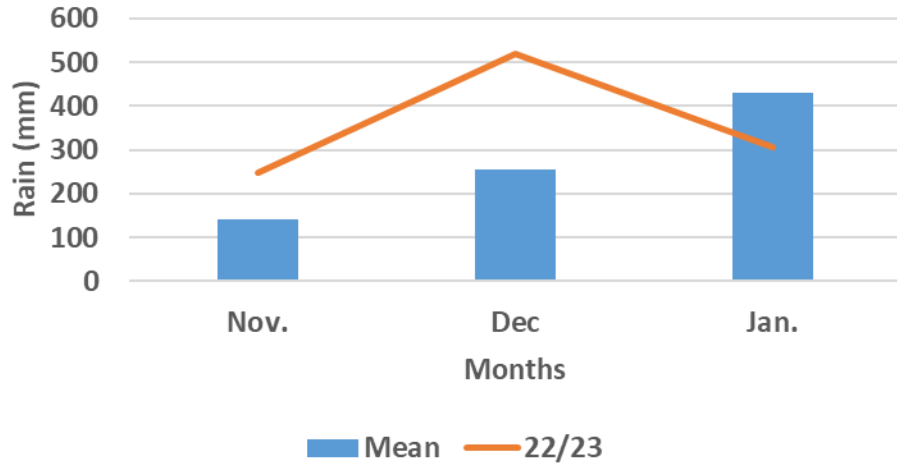


Av. shelf life 13 days

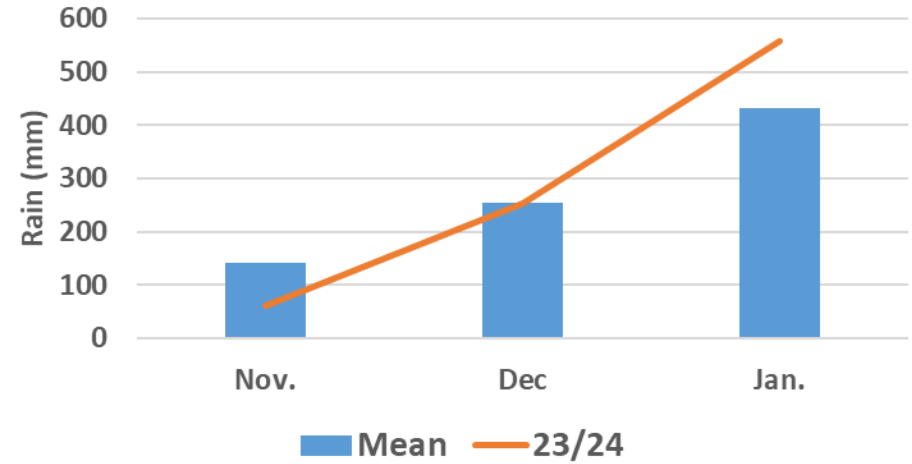
Department of  
Agriculture  
Fisheries

# Above average rainfall impacted harvest & fruit quality

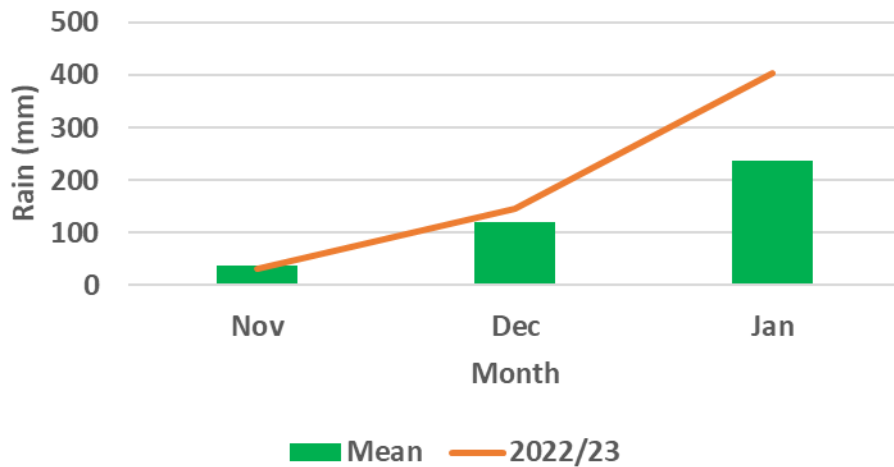
### Darwin Rainfall Nov. 2022-Jan. 2023



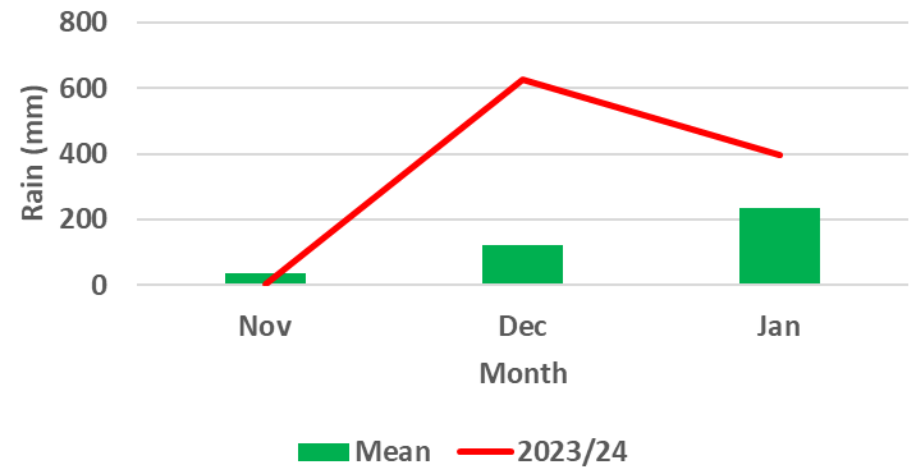
### Darwin Rainfall Nov. 2023 - Jan. 2024



### Mareeba Rainfall Nov. 2022-Jan. 2023



### Mareeba Rainfall Nov. 2023 - Jan. 2024





# Conclusion

## Reduced shelf life due to:

- Excessive and prolonged wet weather
- Longer consolidation times on farm & pack shed
- Delays in supply chain (market bottle necks)
- Unfavourable temperature management from farm to DC (need more focus on dispatch)



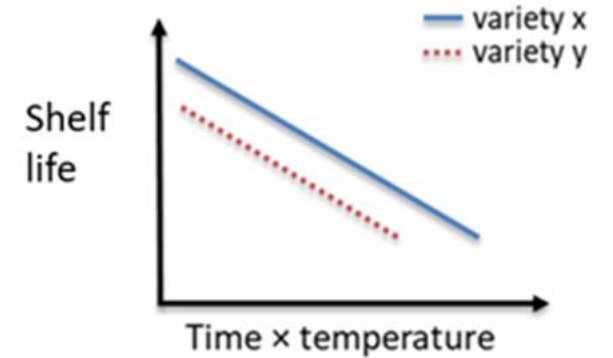
# Conclusion

- Sharing the data with supply chain partners has prompted agreement to improve dispatch and transport temperatures in NT.
- Findings are relevant to all mango growers, emphasizing the importance of supply chain monitoring & management in maintaining fruit quality.



## Next Steps

- Encourage growers & supply chain partners to improve temperature management
- Validate predictive modelling for HG mango in commercial consignments in 2024/25
- Provide industry with access to predictive tools to test and refine



# Acknowledgements:

- Collaborating growers
- AM21000 HG Consignment monitoring team in NT & QLD
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