

## History of a Superfruit Queen Garnet plum

**National and Trans- Tasman  
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**Tony Treloar** – Biochemist

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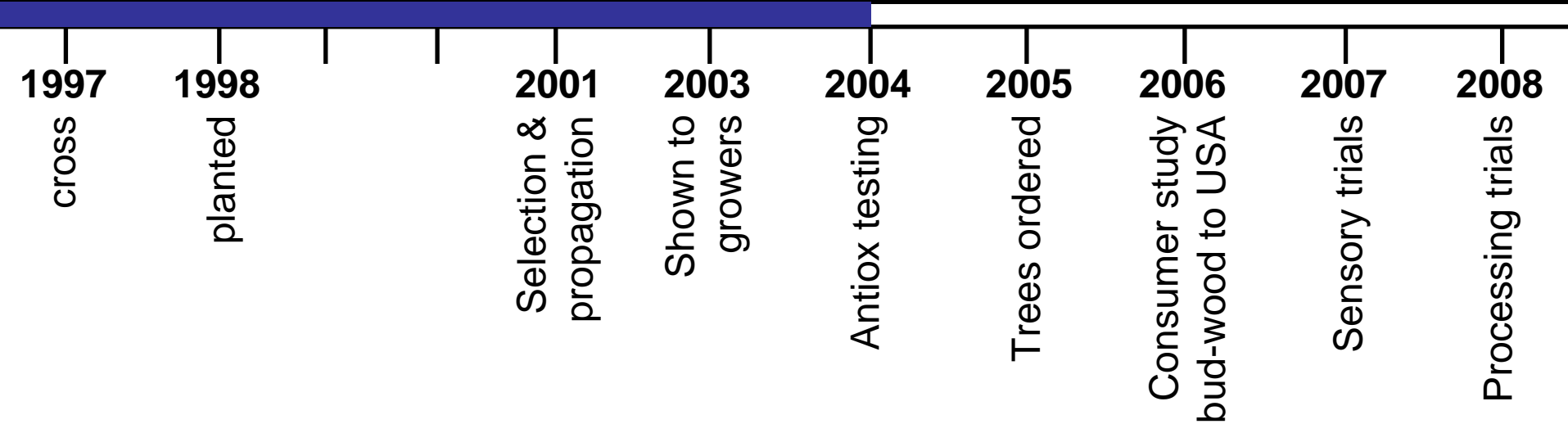
**Craig Davis** - Biochemist

**Stephanie Kirchhoff** – Sensory &  
Consumer scientist



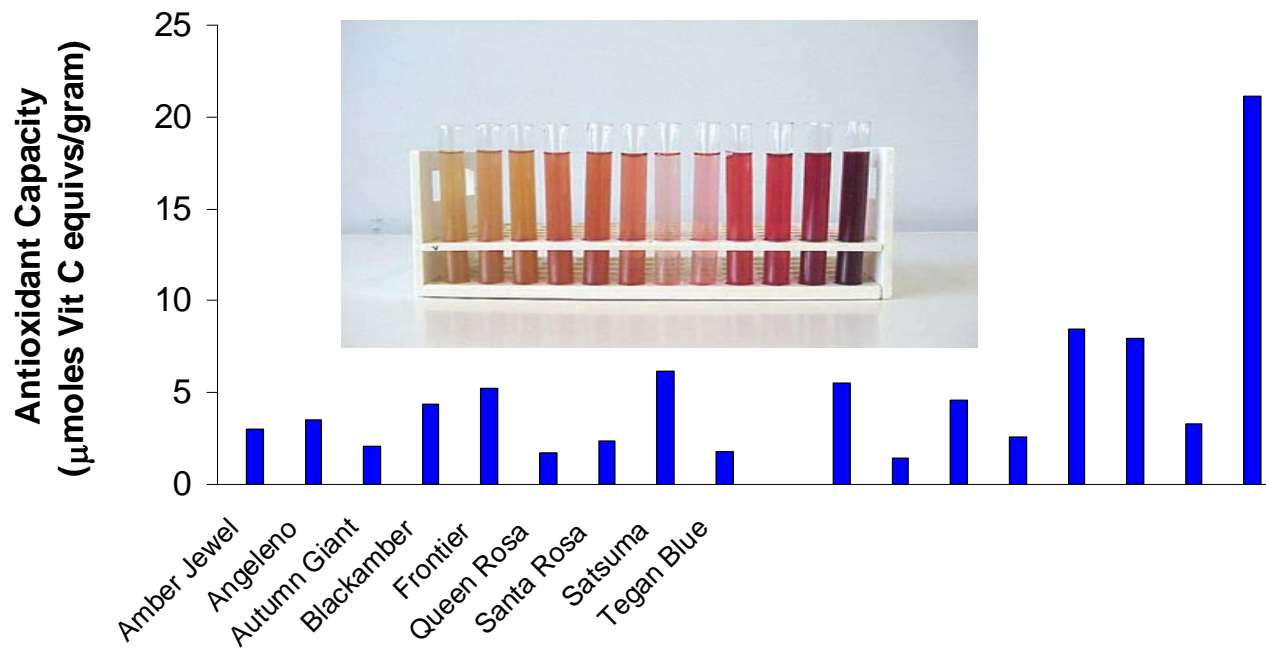
# Timeline

- DPI&F breeding program objective: development of new and improved fresh market plum varieties for domestic and export markets
- Queen Garnet selected in 2001, propagated into stage 2 evaluation and shown to growers in 2003 and 2004.



## 2004: Selecting a natural antioxidant factory

- Since 2004, 120+ genotypes screened for their antioxidant content and compared with available commercial varieties.
- Queen Garnet naturally contains 2-10 times more anthocyanins in comparison with standard varieties.



1997 1998 2001 2003 2004 2005 2006 2007 2008

## 2006: Consumer insight

- Objective: commercial potential and consumer insight
- Focus group and tasting of Queen Garnet and commercial plums
- Eating quality:
  - Appearance: equivalent to commercial plums - even and intense purple colour, juicy and ripened (over ripened) appearance.
  - In mouth: equivalent to commercial plums –firm, mellow flavour or unripe, bitter, chemical taste.
- Functional Attributes: High in antioxidants:
  - would influence choice for 1/2 of respondents,
  - would drink it,
  - would expect a higher price.
- Outcome: successful in consumer and Aox evaluation – promising potential



## 2007: Effect of Harvest date and storage duration

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- Objective: determine harvest and storage parameters for optimal fruit quality
- Anthocyanin content almost doubled from the first harvest date to the last harvest date (from 160mg/100g to 265 mg/100g)
- 5 weeks of cold storage have no effect on anthocyanin content
- Conclusion: anthocyanin content can be predicted by a titratable acidity measurement



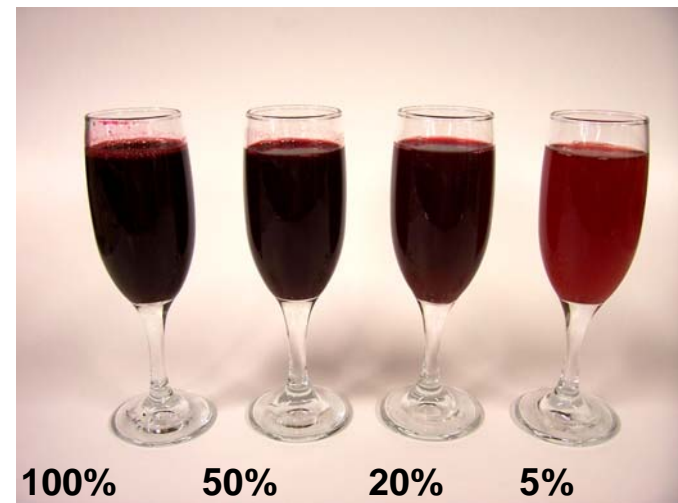
## Since 2005 : Commercialization of the fresh plum

- 2005: planting trees in the Granite Belt
- 2007: commercial partner in Australia



## 2007- 2008: Processing

- Objective: A source of antioxidants available all year round
- Juice: QG Juice contains 40.9 mM ascorbate equivalents = 72 mg/100ml  
'One glass of Queen Garnet plum juice contains as much antioxidants as drinking six cups of tea or thirteen glasses of orange juice'
- Dry fruit
- Antioxidant Powder
- Concentrate



1997

1998

2001

2003

2004

2005

2006

2007

2008

## 2008 - Future Commercialisation Opportunities

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- Seeking partners for commercialisation of processed products (juice, powder, concentrate)
- interest from US and European companies
- +500 trees in Queensland
- Planting of trees in Western Australia,



# Future Work

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Two main project opportunities:

- Fresh plums – to enlarge the window of harvesting by developing a suite of high antioxidant selections that ripen from December through to March - HAL Project Commercialisation of High Antioxidant Plums - SF 07011
- Processed plums - identifying new selections high in antioxidants that are more suitable for processing than fresh market

# Communication and promotion

- Plum field days: from 2005 to now
- Large public: Revolutionary Science 2007, Ag show Toowoomba 2007
- Political: Science in Parliament 2008
- Industry: Ausbiotech 2007, Fresh Futures in Food Workshop 2008
- Scientific: Aushs 2008



# Thanks and acknowledgement

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- Bruce Topp
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- Innovative Food Technologies
- Strategic communication and marketing