

Four New Macadamia Varieties for Australia



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³Hidden Valley Plantations (HVP)



Background

- Australian macadamia industry - >AU\$200 M
- World's largest producer 2016
- Current industry varieties mainly Hawaiian and HVP
- Current varieties are large trees and slow economic break even



Trial Design

- 8 Regional Variety Trial sites in QLD and NSW planted 2008 and 2009
- 20 Industry, 5 standard and 5 HVP varieties
- Harvested from 2013 - 2016
- Disease and insect evaluation
- Oil profile, shelf life and sensory analysis



Selection Process

- MET Analysis and BLUPs of yield and tree data collected for 4 years
- Benchmarking data valued a dollar change in trait
- 20 year economic trait modelling
- Industry advisory committee make the final decision on release
- Plant Breeder's Rights applications

Variety Traits

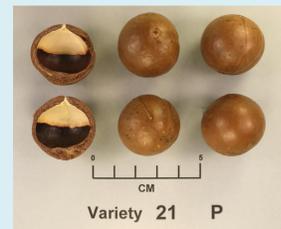
Variety 'G'

- Precocious and high canopy efficiency
- Medium to tall spreading tree
- All-rounder for Bundaberg and Northern Rivers
- Mid to late season nut drop



Variety 'P'

- Small to medium size, spreading tree
- Precocious, produces similar yield to HAES 741 on a tree 33% smaller
- Late season nut drop



Variety 'J'

- Precocious and highly productive
- Medium to large tree
- Ranked 2 at Booyan RVT
- Mid – late season nut drop
- High kernel recovery



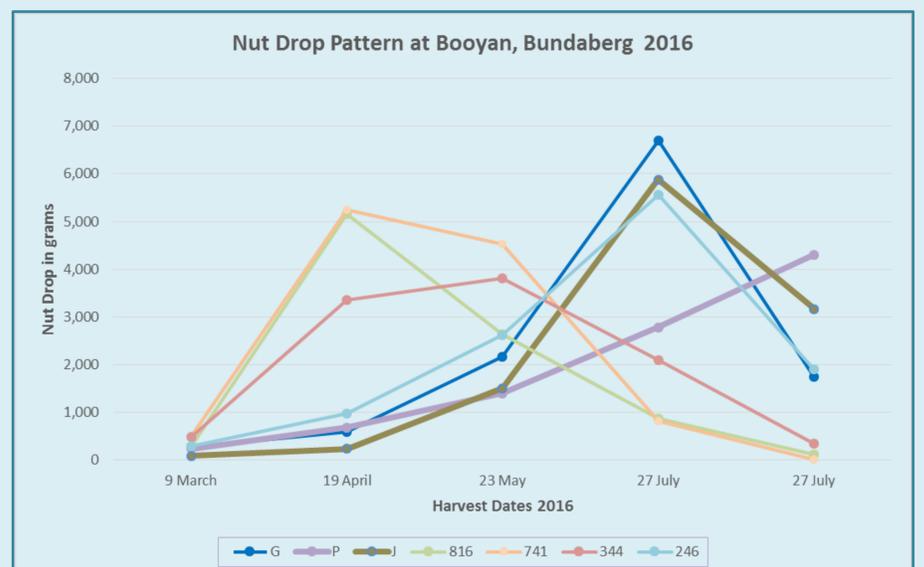
Variety 'R'

- Suited to Northern Rivers, NSW
- Performs well on coastal plain, NSW
- Out-yielding HAES 246 at year 6
- Medium size tree, late season nut drop



Yield and Tree Comparison for Booyan, Bundaberg							
Variety	G	P	J	816	741	344	246
Kernel Recovery (%)	42.9	38.9	44	45.2	38.3	34.2	38.9
Cumulative Kernel Yield (kg) ¹	11.684	9.907	11.041	9.976	9.901	7.577	9.938
Kernel Canopy Efficiency (g/m ³) ²	114	123	106	95	78	83	91
Tree Volume (m ³)	40.4	31.4	40.5	39.2	49	37.7	45
Kernel kg per ha (estimated) ³	1,443	1,147	1,398	1,172	1,205	976	1,284
Kernel kg per ha (estimated) ⁴		1467					
Estimated 20 year DCF for 1ha of orchard ⁵	\$155,874	\$149,641	\$147,928	\$132,559	\$116,640	\$80,156	\$136,351

¹ - Cumulative Kernel Yield 2013 - 2016
² - 2016 (year 8) Kernel Canopy Efficiency
³ - Estimated kernel yield (kg/ha) for 312.5 trees per ha or 8m x 4m at year 8
⁴ - Estimated kernel yield (kg/ha) for 400 trees per ha at year 8
⁵ - Year 20 Discounted Cash Flow for 1ha of orchard (average of standards \$125,126)



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Hort Innovation

