

MassARRAY and SABER Analyses of SNPs in Embryo DNA Reveal the Abscission of Self-Fertilised Progeny during Fruit Development of Macadamia (*Macadamia integrifolia* Maiden & Betche)

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Table S1. Fresh mass (g) of embryo, maternal tissue and total fruitlet at 10 weeks after peak anthesis of retained macadamia cultivar ‘816’ fruitlets arising from different pollen parents

Component	Maternal parent × pollen parent		
	‘816’ × ‘741’	‘816’ × ‘842’	‘816’ × ‘A4’
Embryo	0.71 ± 0.14 b	1.13 ± 0.14 a	0.36 ± 0.03 c
Maternal tissue	5.34 ± 0.43 b	6.83 ± 0.49 a	4.47 ± 0.17 c
Total fruitlet	6.05 ± 0.55 b	7.96 ± 0.63 a	4.83 ± 0.20 c

Means ± SE within a row with bold font and different letters are significantly different (GLM, $p < 0.05$, $n = 27-111$).

Table S2. Mineral nutrient concentrations (mg / 100 g) at 10 weeks after peak anthesis of retained macadamia cultivar '816' fruitlets arising from different pollen parents

Nutrient	Maternal parent × pollen parent		
	'816' × '741'	'816' × '842'	'816' × 'A4'
Nitrogen (N)	496 ± 10 a	481 ± 11 a	496 ± 6 a
Phosphorus (P)	43.8 ± 0.9 a	39.1 ± 1.2 b	44.7 ± 0.5 a
Potassium (K)	250 ± 6 a	206 ± 6 b	256 ± 4 a
Aluminium (Al)	0.148 ± 0.019 a	0.117 ± 0.018 a	0.164 ± 0.017 a
Boron (B)	0.613 ± 0.081 a	0.517 ± 0.037 b	0.537 ± 0.024 ab
Calcium (Ca)	56.5 ± 4.0 a	50.8 ± 3.9 a	63.4 ± 3.2 a
Copper (Cu)	0.198 ± 0.015 a	0.166 ± 0.009 a	0.186 ± 0.008 a
Iron (Fe)	1.24 ± 0.09 a	1.11 ± 0.11 a	1.41 ± 0.07 a
Magnesium (Mg)	35.3 ± 1.0 ab	32.0 ± 1.1 a	36.8 ± 0.5 b
Manganese (Mn)	0.695 ± 0.055 a	0.637 ± 0.070 a	0.784 ± 0.047 a
Sodium (Na)	6.39 ± 0.81 ab	4.26 ± 0.39 a	7.22 ± 0.55 b
Sulphur (S)	42.1 ± 8.0 ab	38.8 ± 1.2 a	44.3 ± 0.7 b
Zinc (Zn)	0.315 ± 0.013 a	0.294 ± 0.013 a	0.314 ± 0.007 a

Means ± SE within a row with bold font and different letters are significantly different (GLM, $p < 0.05$, $n = 27-111$).

Table S3. Total mineral nutrient contents per fruitlet (mg / fruitlet) at 10 weeks after peak anthesis of retained macadamia cultivar '816' fruitlets arising from different pollen parents

Nutrient	Maternal parent × pollen parent		
	'816' × '741'	'816' × '842'	'816' × 'A4'
Nitrogen (N)	29.1 ± 2.4 a	37.6 ± 2.9 b	23.7 ± 0.9 c
Phosphorus (P)	2.55 ± 0.20 a	3.00 ± 0.21 a	2.12 ± 0.08 b
Potassium (K)	14.3 ± 1.1 a	15.7 ± 1.0 a	11.9 ± 0.4 b
Aluminium (Al)	0.009 ± 0.002 a	0.009 ± 0.002 a	0.008 ± 0.001 a
Boron (B)	0.032 ± 0.004 a	0.039 ± 0.003 a	0.025 ± 0.001 b
Calcium (Ca)	3.20 ± 0.29 a	3.87 ± 0.37 b	2.88 ± 0.16 a
Copper (Cu)	0.012 ± 0.002 a	0.013 ± 0.001 a	0.009 ± 0.001 b
Iron (Fe)	0.073 ± 0.009 ab	0.087 ± 0.013 a	0.067 ± 0.004 b
Magnesium (Mg)	2.04 ± 0.16 ab	2.42 ± 0.15 a	1.73 ± 0.06 b
Manganese (Mn)	0.043 ± 0.006 ab	0.048 ± 0.005 a	0.035 ± 0.002 b
Sodium (Na)	0.335 ± 0.039 a	0.320 ± 0.032 a	0.313 ± 0.021 a
Sulphur (S)	2.47 ± 0.20 a	2.97 ± 0.19 b	2.07 ± 0.07 c
Zinc (Zn)	0.019 ± 0.002 ab	0.023 ± 0.002 a	0.016 ± 0.001 b

Means ± SE within a row with bold font and different letters are significantly different (GLM, $p < 0.05$, $n = 27-111$).

Table S4. Mineral nutrient concentrations (mg / 100 g) in mature kernels of macadamia cultivar '816' arising from different pollen parents

Nutrient	Maternal parent × pollen parent				
	'816' × '816'	'816' × '741'	'816' × '842'	'816' × 'A203'	'816' × 'A4'
Nitrogen (N)	1444 ± 46 a	1310 ± 28 ab	1386 ± 22 a	1273 ± 24 b	1320 ± 33 ab
Phosphorus (P)	210 ± 18 a	198 ± 13 a	195 ± 8 a	208 ± 9 a	204 ± 11 a
Potassium (K)	292 ± 34 a	379 ± 25 bc	362 ± 15 ab	402 ± 15 c	364 ± 15 abc
Aluminium (Al)	0.252 ± 0.048 a	0.126 ± 0.010 b	0.154 ± 0.010 b	0.156 ± 0.012 b	0.137 ± 0.013 b
Boron (B)	0.597 ± 0.103 a	0.893 ± 0.059 b	0.757 ± 0.046 b	0.800 ± 0.050 b	0.894 ± 0.053 b
Calcium (Ca)	73.2 ± 4.5 a	64.1 ± 3.6 a	65.0 ± 2.4 a	58.3 ± 3.0 a	58.2 ± 2.8 a
Copper (Cu)	0.378 ± 0.029 a	0.382 ± 0.021 a	0.410 ± 0.014 a	0.354 ± 0.016 a	0.365 ± 0.017 a
Iron (Fe)	2.00 ± 0.23 a	1.89 ± 0.13 a	1.87 ± 0.11 a	1.73 ± 0.08 a	1.96 ± 0.13 a
Magnesium (Mg)	107 ± 10 a	105 ± 7 a	118 ± 5 a	112 ± 4 a	117 ± 6 a
Manganese (Mn)	0.423 ± 0.054 a	0.506 ± 0.041 a	0.562 ± 0.031 a	0.507 ± 0.032 a	0.519 ± 0.026 a
Sodium (Na)	1.18 ± 0.10 ab	1.26 ± 0.12 ab	1.02 ± 0.10 a	1.40 ± 0.09 b	1.30 ± 0.12 ab
Sulphur (S)	132 ± 6 a	129 ± 4 a	127 ± 4 a	130 ± 3 a	131 ± 5 a
Zinc (Zn)	1.14 ± 0.09 a	0.91 ± 0.07 a	0.89 ± 0.04 a	0.93 ± 0.05 a	0.92 ± 0.05 a

Means ± SE within a row with bold font and different letters are significantly different (GLM, $p < 0.05$, $n = 14$ nuts for self-pollination and $n = 37$ – 62 nuts for other pollen parents).

Table S5. Total mineral nutrient contents per kernel (mg / kernel) in the mature kernels of macadamia cultivar '816' arising from different pollen parents

Nutrient	Maternal parent × pollen parent				
	'816' × '816'	'816' × '741'	'816' × '842'	'816' × 'A203'	'816' × 'A4'
Nitrogen (N)	32.05 ± 2.54 ab	30.92 ± 0.98 a	37.62 ± 1.07 b	38.78 ± 1.04 bc	41.99 ± 1.38 c
Phosphorus (P)	4.65 ± 0.55 ab	4.58 ± 0.30 a	5.30 ± 0.25 ab	6.39 ± 0.33 c	6.33 ± 0.33 bc
Potassium (K)	6.43 ± 0.83 a	9.00 ± 0.66 a	9.79 ± 0.47 a	12.47 ± 0.67 b	11.50 ± 0.51 b
Aluminium (Al)	0.0057 ± 0.0013 a	0.0031 ± 0.0003 b	0.0042 ± 0.0003 b	0.0049 ± 0.0004 a	0.0043 ± 0.0004 ab
Boron (B)	0.013 ± 0.002 a	0.021 ± 0.001 ab	0.021 ± 0.001 ab	0.024 ± 0.001 bc	0.029 ± 0.002 c
Calcium (Ca)	1.60 ± 0.14 a	1.53 ± 0.10 a	1.76 ± 0.08 a	1.75 ± 0.92 a	1.83 ± 0.08 a
Copper (Cu)	0.009 ± 0.001 a	0.009 ± 0.001 a	0.011 ± 0.001 a	0.011 ± 0.001 a	0.012 ± 0.001 a
Iron (Fe)	0.042 ± 0.005 a	0.045 ± 0.004 a	0.051 ± 0.003 ab	0.053 ± 0.003 ab	0.064 ± 0.005 b
Magnesium (Mg)	2.40 ± 0.28 a	2.49 ± 0.18 a	3.21 ± 0.16 ab	3.44 ± 0.16 bc	3.58 ± 0.19 c
Manganese (Mn)	0.010 ± 0.001 a	0.012 ± 0.001 ab	0.016 ± 0.001 ab	0.015 ± 0.001 ab	0.017 ± 0.001 b
Sodium (Na)	0.027 ± 0.004 a	0.032 ± 0.004 ab	0.028 ± 0.003 a	0.043 ± 0.003 b	0.043 ± 0.004 b
Sulphur (S)	2.92 ± 0.26 a	3.09 ± 0.16 a	3.45 ± 0.12 a	3.93 ± 0.14 ab	4.16 ± 0.18 b
Zinc (Zn)	0.026 ± 0.003 ab	0.021 ± 0.002 a	0.024 ± 0.001 a	0.029 ± 0.002 b	0.029 ± 0.002 b

Means ± SE within rows with bold font and different letters are significantly different (GLM, $p < 0.05$, $n = 14$ nuts for self-pollination and $n = 37$ – 62 nuts for other pollen parents).