



BREVILLE JUICER COMPARISON TRIAL 2012

Client: BREVILLE PTY LTD

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(Inorganics & Food Composition Manager)

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1. PROCESS SUMMARY

1.1 Juicer Units

Five domestic juice extractors were delivered to NMI Port Melbourne from Breville. Upon receipt each unit was photographed (see Appendix C). Each unit is identified as follows;

Table 1: Juicer identification

Juicer Description
Breville Juice Fountain Crush BJS600
Breville Juice Fountain Compact BJE200
Breville Juice Fountain BJE410
Breville Froojie Fountain BJE520
Breville Professional Juicer BJE820

1.2 Purchase

10 kg each of apples, celery, carrots, tomatoes and spinach were purchased from Coles Supermarket Port Melbourne, Costco Docklands and an Independent supermarket in Airport West.

1.3 Sample Treatment

Treatment of Whole Sample:

One kilogram of each commodity was allowed to equilibrate to ambient temperature and then blended with the aid of a laboratory blender in order to determine the amount of each analyte in the sample before juicing. Analysis was conducted within 3 days of preparation with the exception of vitamin C which was determined the same day.

Treatment of Juicing Sample:

Each commodity was allowed to equilibrate to ambient temperature and sub-sampled into one kilogram samples. The sample was then prepared with the aid of each juicer described in Table 1

After juicing each one kilogram sample, the temperature, yield (i.e. weight to weight determination) and froth (i.e. volume to volume determination) was determined immediately. Froth was determined after a fixed time of 2 minutes for all purchases.

As in the case of each whole sample, analysis of juiced samples was conducted within 3 days of juicing with the exception of vitamin C, which was



determined the same day as juicing. Tables 2-6 summarises results for all tests conducted.

1.4 Testing of Samples

All testing of samples was conducted in accordance to methods developed by NMI and accredited to NATA requirements. The Limit of Reporting (LOR) for each of the vitamins test is as stated in Appendix A (QA/QC Report), however where possible, if positive a result below the LOR was reported.



2. RESULT SUMMARY

Apples

	Temp (°C)	Froth (%v/v)	Yield (%w/w)	Vitamin C (mg/100g)	Vitamin B1 (mg/100g)	α - carotene (ug/100g)	β - Carotene (ug/100g)	Calcium (mg/Kg)	Iron (mg/Kg)	Magnesium (mg/Kg)	Potassium (mg/Kg)
Whole	21.8	N.A	N.A	1.7	0.006	N.A	N.A	50	1.1	55	1100
Breville Juice Fountain Crush BJS600	22.5	17.6	75.7	0.36	0.003	N.A	N.A	17	0.67	35	1000
Breville Juice Fountain Compact BJE200	23.0	81.3	72.5	0.36	0.004	N.A	N.A	8.9	1.2	18	1100
Breville Juice Fountain BJE410	22.5	72.2	68.2	0.43	0.003	N.A	N.A	13	0.82	21	1000
Breville Froojie Fountain BJE520	24.0	73.3	65.4	0.43	0.003	N.A	N.A	12	0.94	22	1100
Breville Professional Juicer BJE820	22.0	59.5	70.3	0.60	0.003	N.A	N.A	17	0.88	25	1100

Table 2: Apples results

Celery

	Temp (°C)	Froth (%v/v)	Yield (%w/w)	Vitamin C (mg/100g)	Vitamin B1 (mg/100g)	α - carotene (ug/100g)	β - Carotene (ug/100g)	Calcium (mg/Kg)	Iron (mg/Kg)	Magnesium (mg/Kg)	Potassium (mg/Kg)
Whole	20.0	N.A	N.A	4.1	0.008	N.A	N.A	440	0.94	120	2800
Breville Juice Fountain Crush BJS600	20.5	2.4	81.4	3.5	0.006	N.A	N.A	270	0.82	89	2500
Breville Juice Fountain Compact BJE200	19.0	13.6	80.3	3.7	0.006	N.A	N.A	210	0.67	95	2800
Breville Juice Fountain BJE410	19.5	12.0	77.6	3.9	0.006	N.A	N.A	250	0.76	90	2700
Breville Froojie Fountain BJE520	19.0	10.8	77.0	3.5	0.006	N.A	N.A	290	0.72	91	2800
Breville Professional Juicer BJE820	19.5	15.3	77.4	3.6	0.006	N.A	N.A	200	0.78	88	2600

Table 3: Celery results



Carrot

	Temp (°C)	Froth (%v/v)	Yield (%w/w)	Vitamin C (mg/100g)	Vitamin B1 (mg/100g)	α - carotene (ug/100g)	β - Carotene (ug/100g)	Calcium (mg/Kg)	Iron (mg/Kg)	Magnesium (mg/Kg)	Potassium (mg/Kg)
Whole	21.7	N.A	N.A	2.8	0.020	3000	5200	270	1.8	110	3200
Breville Juice Fountain Crush BJS600	23.5	2.2	46.4	2.6	0.015	5300	9800	170	1.6	88	2800
Breville Juice Fountain Compact BJE200	22.0	16.4	53.4	2.3	0.015	5700	11000	59	1.6	69	3200
Breville Juice Fountain BJE410	23.5	6.9	59.7	2.3	0.019	6000	11000	110	1.4	81	2900
Breville Froojie Fountain BJE520	22.0	5.9	51.5	2.5	0.020	5600	11000	74	1.5	72	3100
Breville Professional Juicer BJE820	22.5	4.8	62.4	2.3	0.016	6200	11000	89	1.5	73	3000

Table 4: Carrot results

Tomato

	Temp (°C)	Froth (%v/v)	Yield (%w/w)	Vitamin C (mg/100g)	Vitamin B1 (mg/100g)	α - carotene (ug/100g)	β - Carotene (ug/100g)	Calcium (mg/Kg)	Iron (mg/Kg)	Magnesium (mg/Kg)	Potassium (mg/Kg)
Whole	19.0	N.A	N.A	16	0.008	N.A	N.A	90	2.1	90	2500
Breville Juice Fountain Crush BJS600	19.5	1.6	64.4	15	0.005	N.A	N.A	68	1.8	58	2400
Breville Juice Fountain Compact BJE200	19.5	45.7	61.2	15	0.005	N.A	N.A	50	1.4	59	2400
Breville Juice Fountain BJE410	19.5	64.0	65.3	15	0.006	N.A	N.A	59	1.4	61	2400
Breville Froojie Fountain BJE520	19.5	8.3	51.5	16	0.008	N.A	N.A	61	1.3	63	2500
Breville Professional Juicer BJE820	20.0	53.8	57.2	18	0.008	N.A	N.A	44	1.6	53	2300

Table 5: Tomato results



Spinach

	Temp (°C)	Froth (%v/v)	Yield (%w/w)	Vitamin C (mg/100g)	Vitamin B1 (mg/100g)	α - carotene (ug/100g)	β - Carotene (ug/100g)	Calcium (mg/Kg)	Iron (mg/Kg)	Magnesium (mg/Kg)	Potassium (mg/Kg)
Whole	20.0	N.A	N.A	50	0.12	<5	2700	1000	9.7	680	7700
Breville Juice Fountain Crush BJS600	22.0	76.5	57.9	35	0.10	<5	3300	390	8.7	900	7700
Breville Juice Fountain Compact BJE200	24.5	55.2	44.3	31	0.07	<5	3700	520	12	800	7200
Breville Juice Fountain BJE410	22.0	70.0	58.9	24	0.06	<5	3200	360	18	810	7700
Breville Froojie Fountain BJE520	22.0	33.3	46.8	28	0.07	<5	3700	480	15	800	7000
Breville Professional Juicer BJE820	21.5	25.3	52.4	22	0.05	<5	3300	330	17	850	6700

Table 6: Spinach results



APPENDIX A

QA/QC Reports



QUALITY ASSURANCE REPORT

Sample Matrix: Food

Client: Breville Pty Ltd

NMI Job No: BREV01/121030

Analyte	Units	LOR	Blank	V12/028025	V12/028025	Mean	%RPD	V12/028025	SRM
				Replicate 1	Replicate 2			%Spike Recovery	Agal7
Calcium	mg/kg	5	<5	240	240	240	0	96	100
Iron	mg/kg	0.5	<0.5	0.93	0.89	0.91	4	99	82
Magnesium	mg/kg	5	<5	87	87	87	0	103	99
Potassium	mg/kg	10	<10	2800	2800	2800	0	84	107

Analyte	Units	LOR	Blank	V12/028041	V12/028041	Mean	%RPD	V12/028041	SRM
				Replicate 1	Replicate 2			%Spike Recovery	Agal7
Calcium	mg/kg	5	<5	51	46	49	10	100	100
Iron	mg/kg	0.5	<0.5	1.1	1.1	1.1	0	100	82
Magnesium	mg/kg	5	<5	61	56	59	8	103	99
Potassium	mg/kg	10	<10	2500	2300	2400	8	-	107

Analyte	Units	LOR	Blank	V12/028049	V12/028049	Mean	%RPD	V12/028049	SRM
				Replicate 1	Replicate 2			%Spike Recovery	Agal7
Calcium	mg/kg	5	<5	390	430	410	9	90	100
Iron	mg/kg	0.5	<0.5	17	21	18	6	96	82
Magnesium	mg/kg	5	<5	780	780	780	0	83	99
Potassium	mg/kg	10	<10	7200	7100	7200	1	-	107



Analyte	Units	LOR	Blank	V12/028033	V12/028033	Mean	%RPD	V12/028033	SRM Agal4
				Replicate 1	Replicate 2			%Spike Recovery	%Recovery
Calcium	mg/kg	5	<5	83	74	79	11	101	91
Iron	mg/kg	0.5	<0.5	1.3	1.4	1.4	7	97	96
Magnesium	mg/kg	5	<5	68	66	67	2	101	93
Potassium	mg/kg	10	<10	2800	2800	2800	0	-	95

Acceptable recovery is 80 -120%.

Acceptable RPD's on duplicates is:

24% with results >20 times MDL

38% with results <20 times MDL

LOR: Limit of Reporting.

RPD: Relative Percent Difference.

'-': Not Available

NA: Not Applicable

Signed:

Paul Adorno
Inorganics, Vic.
23/11/2012

Date:

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL



QUALITY ASSURANCE REPORT

Matrix: FRUITS & VEGETABLES

Client: BREVILLE PTY LTD

NMI Job No: BREV01A-ET1210

Thiamin

LRN	Units	LOR	Replicate 1	Replicate 2	Mean	%RPD	Sample %Recovery	Control %Recovery
FAPAS 2172	mg/100g	0.02	1.10	1.10	1.10	0.0	--	100
V12/028011	mg/100g	0.02	0.003	0.003	0.003	0.0	80	--
FAPAS 2172	mg/100g	0.02	1.04	1.01	1.025	2.9	--	93
V12/028049	mg/100g	0.02	0.05	0.05	0.05	0.0	91	--
FAPAS 2172	mg/100g	0.02	1.20	1.20	1.20	0.0	--	104
V12/028018	mg/100g	0.02	0.008	0.007	0.0075	13.3	94	--

Control: FAPAS 2172 assigned value 1.1 mg/100g.

Vitamin C

LRN	Units	LOR	Replicate 1	Replicate 2	Mean	%RPD	Sample %Recovery	Control %Recovery
FAPAS 2162	mg/100g	1	39.1	37.1	38.1	5.2	--	92
V12/028010	mg/100g	1	1.4	1.9	1.65	30.3	82	--
FAPAS 2162	mg/100g	1	37.4	38.0	37.7	1.6	--	91
V12/028026	mg/100g	1	2.8	2.7	2.75	3.6	99	--
FAPAS 2162	mg/100g	1	38.0	38.9	38.45	2.3	--	93
V12/028042	mg/100g	1	48.3	51.6	49.95	6.6	99.9	--
V12/028034	mg/100g	1	14.9	16.0	15.45	7.1	99.9	--
FAPAS 2162	mg/100g	1	37.3	35.7	36.5	4.4	--	88
V12/028018	mg/100g	1	4.1	4.0	4.05	2.5	103	--

Control: FAPAS 2162 assigned value 41.5 mg/100g.



β-Carotene

LRN	Units	LOR	Replicate 1	Replicate 2	Mean	%RPD	Sample %Recovery
V12/028026	µg/100g	5	5000	5300	5150	5.8	99.9
V12/028042	µg/100g	5	2684	2644	2664	1.5	99

There is no control material available for β-Carotene analysis.

α-Carotene

LRN	Units	LOR	Replicate 1	Replicate 2	Mean	%RPD	Sample %Recovery
V12/028026	µg/100g	5	2900	3000	2950	3.4	99.9

There is no control material available for α-Carotene analysis.

Acceptable recovery is 80-120% for most analytes.

Acceptable RPD's on duplicates is $\leq 10\%$ with results >10 times LOR for most analytes.

LOR: Limit of Reporting.

RPD: Relative Percent Difference.

'--': Not Available

NA: Not Applicable

Signed:

**Paul Adorno
Food Composition, Vic.**

Date:

26/11/12

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL



APPENDIX B

Photos



Photo 1: Breville Juice Fountain Crush BJS600



Photo 2: Breville Juice Fountain Compact BJE200



Photo 3: Breville Juice Fountain BJE410



Photo 4: Breville Froojie Fountain BJE520



Photo 5: Breville Professional Juicer BJE820



Photo 6: Apples



Photo 7: Apples prepared and weighed



Photo 8: Celery



Photo 9: Carrots



Photo 10: Tomatoes



Photo 11: Spinach