Environmental Analysis Laboratory

Southern Cross University
PO Box 157 Lismore NSW 2480
P: +61 2 6620 3678
E: eal@scu.edu.au
www.scu.edu.au/eal
ABN: 41 995 651 524

AS4454:2012 COMPOSTS, SOIL CONDITIONERS AND MULCHES REPORT

1 sample supplied by JR Richards & Sons on the 27 February, 2020 - Lab Job No. J1165.

Analysis requested by Indika Kelasekara.

15-19 Brickworks Lane SOUTH GRAFTON NSW 2461

		Sample 1	*Guideline*
	Product Name:	TD03-20191204	
	Product Type:	Fine Mulch <16mm	
	Manufacturing Site:	JR Richards & Sons	*AS4454:2012 Composted Product*
	Manufactured Date:	25/02/2020	
	Test Code:	CA-PACK-003	
	Standard Applicable:	AS4454:2012	
Parameter	**Method Reference**	**J1165/1**	
Bulk Density (kg/L)	AS4454:2012 Appendix J	0.33	..
Moisture Content (%)	AS4454:2012 Appendix I	31	*> 25*
pH	AS4454:2012 Appendix B	7.26	*> 5*
Electrical Conductivity (dS/m)		4.27	*< 10*
Total Organic Carbon (%)	AS4454:2012 Appendix C	18.3	*≥ 20*
Total Carbon (%)		24.6	..
Total Nitrogen (%)		1.77	*≥ 0.8* see note 7
Carbon/Nitrogen Ratio	Calculation - Total Organic Carbon/Total Nitrogen	10.4	..
Estimated Organic Matter (% OM)	Calculation - Total Organic Carbon x 1.7	31.2	..
Ammonium Nitrogen (mg/L N)	AS4454:2012 Appendix B	187	*< 200*
Ammonium Nitrogen (mg/kg N)		935	..
Nitrate Nitrogen (mg/L N)		2.4	..
Nitrate Nitrogen (mg/kg N)		12.1	*≥ 10* see note 7
Phosphate Phosphorus (mg/L P)		27.4	*≤ 5* see note 7
Phosphate Phosphorus (mg/kg P)		137	..
Ammonium/Nitrate Ratio	Calculation - Ammonium/Nitrate	77.3	*< 3.0*
Nitrogen Drawdown Index (NDI_{150})	AS4454:2012 Appendix O	0.1	*> 0.2*
Total Calcium (%)	AS4454:2012 Appendix D	2.27	..
Total Magnesium (%)		0.42	..
Total Potassium (%)		0.96	..
Total Sodium (%)		0.25	*<1 Na*
Total Sulphur (%)		0.18	..
Total Phosphorus (%)	AS4454:2012 Appendix D	0.39	*≤ 0.1 P* see note 10
Total Zinc (mg/kg)	AS4454:2012 Appendix D	183	*< 300 Zn*
Total Manganese (mg/kg)		309	..
Total Iron (mg/kg)		12,202	..
Total Copper (mg/kg)		43.3	*< 150 Cu*
Total Boron (mg/kg)		22.2	*< 100 B*
Total Silicon (mg/kg)		957	..
Total Aluminium (mg/kg)		5,564	..
Total Molybdenum (mg/kg)	AS4454:2012 Appendix D	<1	..
Total Cobalt (mg/kg)		5.60	..
Total Selenium (mg/kg)		<1	*< 5 Se*
Total Cadmium (mg/kg)	AS4454:2012 Appendix D	<0.5	*< 1 Cd*
Total Lead (mg/kg)		39.1	*< 150 Pb*
Total Arsenic (mg/kg)		4.1	*< 20 As*
Total Chromium (mg/kg)		16.0	*< 100 Cr*
Total Nickel (mg/kg)		11.1	*< 60 Ni*
Total Mercury (mg/kg)		<0.1	*< 1 Hg*
Total Silver (mg/kg)		<1	..

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Parameter	Method Reference	J1165/1	
Polychlorinated Biphenyls (mg/kg)	Sub** - SGS Laboratories SE203379	<0.2	*< 0.2*
Organochlorine Pesticides - DDT, DDD, DDE (mg/kg)		<0.01	*< 0.5*
Organochlorine Pesticides - Dieldrin (mg/kg)		0.024	*< 0.02*
Organochlorine Pesticides - Other (mg/kg) see note 9		<0.01	*< 0.02*
Salmonella spp (Absent in 25 g)	Sub** - Symbio Laboratories B881756	Not Detected	*Absent in 25 g*
E. coli (MPN/g DW)	AS4454:2012 Appendix D	Not Detected	*< 100 MPN/g*
Faecal Coliforms (MPN/g DW)		>1100	*< 1000 MPN/g*
Particle Size Grading > 16 mm Sieve (%)	AS4454:2012 Appendix G	Nil	.. see note 5
Particle Size Grading 5–16 mm Sieve (%)		7.8	.. see note 5
Particle Size Grading < 5 mm Sieve (%)		92.2	.. see note 5
Plastics Light Flexible or film > 5 mm (%)	AS4454:2012 Appendix I	<0.01	*≤ 0.05*
Stones and Lumps of Clay > 5 mm (%)		2.54	*≤ 5*
Glass, metal and rigid plastics > 2 mm (%)		0.15	*≤ 0.5*
Wettability (min)	AS4454:2012 Appendix E	0m 16s	*< 5*
Plant Growth Test - Root Elongation (mm)	AS4454:2012 Appendix F	21	*> 60*
Solvita Compost Maturity Index	Solvita NH3	5	..
	Solvita CO2	5	..
	Solvita Maturity Index	5	*5 - 8*
Viable Plant Propagules (7 days)	AS4454:2012 Appendix M	Nil	..
Viable Plant Propagules (21 days)	AS4454:2012 Appendix M	Nil	*Nil after 21 days*

Notes:

1. Methods from AS4454:2012 *Composts, soil conditioners and mulches* .
2. Indicative guidelines are based on those in AS4454:2012 for raw mulches, pasteurized product, composted product, mature composts.
3. Total Acid Extractable Nutrients indicate a store of nutrients.
4. Conversions for 1 mg/kg = 1 ppm; 1 % = 10,000 ppm; kg/ha = mg/kg x 2.24.
5. Coarse Mulch > 70% >16mm, Fine Mulch <20% >16mm and <20% <5mm, Soil Conditioner <20% >16mm.
6. The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate.
7. Guide only to be used if a product claims to contribute to plant nutrition.
8. The full test observes the potential growth of viable plant propagules in a 21 day test period. In order to pass there should be Nil after 21 days
9. Other Organochlorines include: Aldrin, Dieldrin, Chlordane, Heptachlor, HCB, Lindane, BHC Other Organophosphorus include: Guthion, Bromophos-ethyl, Chlorpyriphos, Chlorpyriphos-methy, Diazinon, Dichlorvos, Dimethoate, Ethion, Fenitrothion, Malathion, Parathion, Ronnel.
10. Guide only to be used if a product claims to be used for phosphorus sensitive plants. < 1 if applied to sandy soils
11. Analysis conducted between sample arrival date and reporting date.
12. This report is not to be reproduced except in full.
13. Sub** - Analysis sub-contracted.
14. All testing parameters have been facilitated by a NATA accredited laboratory.
15. All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions. These Terms and Conditions are available on the EAL website: scu.edu.au/eal, or on request.

Quality Checked: Brian Smith
Compost & Landscape Soils Co-ordinator