

AS4454:2012 COMPOSTS, SOIL CONDITIONERS AND MULCHES REPORT

3 samples supplied by Corbets Group on the 19 February, 2020 - Lab Job No. J0836.

Analysis requested by Mick Fleming. Revised on the 16 March, 2020.

3 Corbet Road GYMPIE QLD 4570

		Product Name: Product Type: Manufacturing Site: Manufactured Date: Test Code: Standard Applicable:	Sample 3 Nexgen 20 Plus Compost Compost Corbets Group .. CA-PACK-011 AS4454:2012	Guideline AS4454:2012 Mature Compost
Parameter	Method Reference	J0836/3		
Bulk Density (kg/L)	AS4454:2012 Appendix J	0.35	..	
Moisture Content (%)	AS4454:2012 Appendix I	47	> 25	
pH	AS4454:2012 Appendix B	6.85	> 5	
Electrical Conductivity (dS/m)		1.90	< 10	
Total Organic Carbon (%)		21.6	≥ 20	
Total Carbon (%)	AS4454:2012 Appendix C	40.2	..	
Total Nitrogen (%)		0.83	≥ 0.8	see note 7
Carbon/Nitrogen Ratio	Calculation - Total Organic Carbon/Total Nitrogen	26.0	..	
Estimated Organic Matter (% OM)	Calculation - Total Organic Carbon x 1.7	36.6	..	
Ammonium Nitrogen (mg/L N)		12.8	< 100	
Ammonium Nitrogen (mg/kg N)		64.0	..	
Nitrate Nitrogen (mg/L N)	AS4454:2012 Appendix B	32.0	..	
Nitrate Nitrogen (mg/kg N)		160.0	≥ 10	see note 7
Phosphate Phosphorus (mg/L P)		39.5	≤ 5	see note 7
Phosphate Phosphorus (mg/kg P)		197.7	..	
Ammonium/Nitrate Ratio	Calculation - Ammonium/Nitrate	0.4	< 0.5	
Nitrogen Drawdown Index (NDI ₁₅₀)	AS4454:2012 Appendix O	0.6	> 0.5	
Total Calcium (%)		1.03	..	
Total Magnesium (%)		0.27	..	
Total Potassium (%)	AS4454:2012 Appendix D	0.52	..	
Total Sodium (%)		0.13	< 1 Na	
Total Sulphur (%)		0.20	..	
Total Phosphorus (%)	AS4454:2012 Appendix D	0.20	≤ 0.1 P	see note 10
Total Zinc (mg/kg)		124	< 300 Zn	
Total Manganese (mg/kg)		300	..	
Total Iron (mg/kg)		5,407	..	
Total Copper (mg/kg)	AS4454:2012 Appendix D	57.5	< 150 Cu	
Total Boron (mg/kg)		16.4	< 100 B	
Total Silicon (mg/kg)		1,740	..	
Total Aluminium (mg/kg)		2,910	..	
Total Molybdenum (mg/kg)		2.62	..	
Total Cobalt (mg/kg)	AS4454:2012 Appendix D	2.75	..	
Total Selenium (mg/kg)		<1	< 5 Se	
Total Cadmium (mg/kg)		<0.5	< 1 Cd	
Total Lead (mg/kg)		7.3	< 150 Pb	
Total Arsenic (mg/kg)		3.0	< 20 As	
Total Chromium (mg/kg)	AS4454:2012 Appendix D	8.0	< 100 Cr	
Total Nickel (mg/kg)		5.2	< 60 Ni	
Total Mercury (mg/kg)		<0.1	< 1 Hg	
Total Silver (mg/kg)		<1	..	

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Parameter	Method Reference	J0836/3	Guideline
Product Name: Nexgen 20 Plus Compost Product Type: Compost Manufacturing Site: Corbets Group Manufactured Date: .. Test Code: CA-PACK-011 Standard Applicable: AS4454:2012		Sample 3	Guideline
Polychlorinated Biphenyls (mg/kg)		<0.2	< 0.2
Organochlorine Pesticides - DDT, DDD, DDE (mg/kg)	Sub** - SGS Laboratories SE203052	<0.01	< 0.5
Organochlorine Pesticides - Other (mg/kg) ^{see note 9}		<0.01	< 0.02
Salmonella spp (Absent in 25 g)	Sub** - Symbio Laboratories B878876	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)		292	< 1000 MPN/g
Total Aerobic Count (CFU/g)	Sub** - Symbio Laboratories B878876	..	
Particle Size Grading > 16 mm Sieve (%)		4.9	.. ^{see note 5}
Particle Size Grading 5–16 mm Sieve (%)	AS4454:2012 Appendix G	42.1	.. ^{see note 5}
Particle Size Grading < 5 mm Sieve (%)		53.0	.. ^{see note 5}
Plastics Light Flexible or film > 5 mm (%)		<0.01	≤ 0.05
Stones and Lumps of Clay > 5 mm (%)	AS4454:2012 Appendix I	4.65	≤ 5
Glass, metal and rigid plastics > 2 mm (%)		<0.01	≤ 0.5
Wettability (min)	AS4454:2012 Appendix E	0m 32s	<5
Plant Growth Test - Root Elongation (mm)	AS4454:2012 Appendix F	122	> 60
Oxygen Consumption Rate (mgO₂/Kg/min)		0.40	..
Specific Oxygen Uptake Rate (mgO₂/gVVS/hr)		0.08	≤ 1
Solvita Compost Maturity Index	Solvita NH3	4	..
	Solvita CO2	7	..
	Solvita Maturity Index	7	7 - 8
Viable Plant Propagules (7 days)	AS4454:2012 Appendix M	Nil	..
Viable Plant Propagules (21 days)	AS4454:2012 Appendix M	N/A	Nil after 21 days

Notes:

- Methods from AS4454:2012 Composts, soil conditioners and mulches.
- Indicative guidelines are based on those in AS4454:2012 for raw mulches, pasteurized product, composted product, mature composts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Conversions for 1 mg/kg = 1 ppm; 1% = 10,000 ppm; kg/ha = mg/kg x 2.24.
- Coarse Mulch > 70% >16mm, Fine Mulch <20% >16mm and <20% <5mm, Soil Conditioner <20% >16mm.
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate.
- Guide only to be used if a product claims to contribute to plant nutrition.
- 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
- Other Organochlorines include: Aldrin, Dieldrin, Chlordane, Heptachlor, HCB, Lindane, BHC Other Organophosphorus include: Guthion, Bromophos-ethyl, Chlorpyrifos, Chlorpyrifos-methy, Diazinon, Dichlorvos, Dimethoate, Ethion, Fenitrothion, Malathion, Parathion, Ronnel.
- Guide only to be used if a product claims to be used for phosphorus sensitive plants. < 1 if applied to sandy soils
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full.
- Sub** - Analysis sub-contracted.
- All testing parameters have been facilitated by a NATA accredited laboratory.
- 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

COMPOST 'AVAILABLES' ANALYSIS REPORT

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Parameter		Method reference	J0836/3
Soluble Calcium (mg/kg)			2597
Soluble Magnesium (mg/kg)		**Inhouse S10 - Morgan 1	1018
Soluble Potassium (mg/kg)			2858
Soluble Phosphorus (mg/kg)			382.3
Phosphorus (mg/kg P)		**Rayment & Lyons 2011 - 9E2 (Bray 1)	390.1
		**Rayment & Lyons 2011 - 9B2 (Colwell)	948
		**Inhouse S3A (Bray 2)	1345
Nitrate Nitrogen (mg/kg N)			50.9
Ammonium Nitrogen (mg/kg N)		**Inhouse S37 (KCl)	250.7
Sulfur (mg/kg S)			189.3
pH		Rayment & Lyons 2011 - 4A1 (1:5 Water)	7.28
Electrical Conductivity (dS/m)		Rayment & Lyons 2011 - 3A1 (1:5 Water)	2.085
Estimated Organic Matter (% OM)		**Calculation - Total Carbon x 1.7	68.4
Exchangeable Calcium (cmol _e /kg)			16.56
Exchangeable Calcium (kg/ha)			7434
Exchangeable Calcium (mg/kg)			3319
Exchangeable Magnesium (cmol _e /kg)			7.92
Exchangeable Magnesium (kg/ha)			2155
Exchangeable Magnesium (mg/kg)		Rayment & Lyons 2011 - 15D3 (Ammonium Acetate)	962
Exchangeable Potassium (cmol _e /kg)			5.59
Exchangeable Potassium (kg/ha)			4893
Exchangeable Potassium (mg/kg)			2184
Exchangeable Sodium (cmol _e /kg)			1.86
Exchangeable Sodium (kg/ha)			960
Exchangeable Sodium (mg/kg)			428
Exchangeable Aluminium (cmol _e /kg)		**Inhouse S37 (KCl)	<0.01
Exchangeable Aluminium (kg/ha)			1.1
Exchangeable Aluminium (mg/kg)			<1
Exchangeable Hydrogen (cmol _e /kg)		**Rayment & Lyons 2011 - 15G1 (Acidity Titration)	<0.01
Exchangeable Hydrogen (kg/ha)			<1
Exchangeable Hydrogen (mg/kg)			<1
Effective Cation Exchange Capacity (ECEC) (cmol _e /kg)		**Calculation - Sum of Ca,Mg,K,Na,Al,H (cmol _e /kg)	31.93
Calcium (%)			51.9
Magnesium (%)			24.8
Potassium (%)		**Base Saturation Calculations - Cation cmol _e /kg / ECEC x 100	17.5
Sodium - ESP (%)			5.8
Aluminium (%)			0.02
Hydrogen			0.00
Calcium/Magnesium Ratio		**Calculation - Calcium / Magnesium (cmol _e /kg)	2.1

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Parameter		Method reference	J0836/3
Product Name:		Nexgen 20 Plus Compost	Sample 3
Product Type:		Compost	
Manufacturing Site:		Corbets Group	
Manufactured Date:		..	
Application:		..	
Test Applicable:		CA-PACK-004	
Zinc (mg/kg)			58.6
Manganese (mg/kg)		Rayment & Lyons 2011 - 12A1 (DTPA)	120
Iron (mg/kg)			153
Copper (mg/kg)			11.9
Boron (mg/kg)		**Rayment & Lyons 2011 - 12C2 (Hot CaCl ₂)	3.40
Silicon (mg/kg Si)		**Inhouse S11 (Hot CaCl ₂)	117
Total Carbon (%)			40.22
Total Nitrogen (%)		Inhouse S4a (LECO Trumac Analyser)	0.83
Carbon/Nitrogen Ratio		**Calculation - Total Carbon/Total Nitrogen	48.5

Notes:

- All results presented as a 40°C oven dried weight. Soil sieved and lightly crushed to < 2 mm.
- Methods from Rayment and Lyons, 2011. Soil Chemical Methods - Australasia. CSIRO Publishing: Collingwood.
- Soluble Salts included in Exchangeable Cations - NO PRE-WASH (unless requested).
- 'Morgan 1 Extract' adapted from 'Science in Agriculture', 'Non-Toxic Farming' and Lamonte Soil Handbook.
- Guidelines for phosphorus have been reduced for Australian soils.
- Indicative guidelines are based on 'Albrecht' and 'Reams' concepts.
- Total Acid Extractable Nutrients indicate a store of nutrients.
- Contaminant Guides based on 'Residential with gardens and accessible soil including childrens daycare centres, preschools, primary schools, town houses or villas' (NSW EPA 1998).
- Information relating to testing colour codes is available on sheet 2 - 'Understanding your test results'.
- Conversions for 1 cmol+/kg = 230 mg/kg Sodium, 390 mg/kg Potassium, 122 mg/kg Magnesium, 200 mg/kg Calcium
- Conversions to kg/ha = mg/kg x 2.24
- The chloride calculation of Cl mg/L = EC x 640 is considered an estimate, and most likely an over-estimate
- ** NATA accreditation does not cover the performance of this service.
- Analysis conducted between sample arrival date and reporting date.
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