Building Soil Organic Carbon with Biogreen Peat

Benefits

Improved Soil structure

Increased Cation Exchange Capacity

Increased pH Buffering Capacity

Enhanced Biological activity

Increased Soil fertility

For soils low in organic matter these benefits lead to:

Improved soil aggregation for increased aeration, reduced bulk density, reduced erosion and increased root development

Increased water holding capacity (sandy soils) and improved drainage (clay soils) for improved water use efficiency

Reduced nutrient leaching and increased nutrient availability for Improved fertiliser efficiency

Reduced harmful effects from soil acidifying agricultural practices

Enhanced disease suppression

All these benefits result in increased productivity

Biogreen Peat is available as raw product, 4mm and 10mm screened and pellet form. Pelletised Biogreen Peat improves transport, handling and spreading efficiencies.

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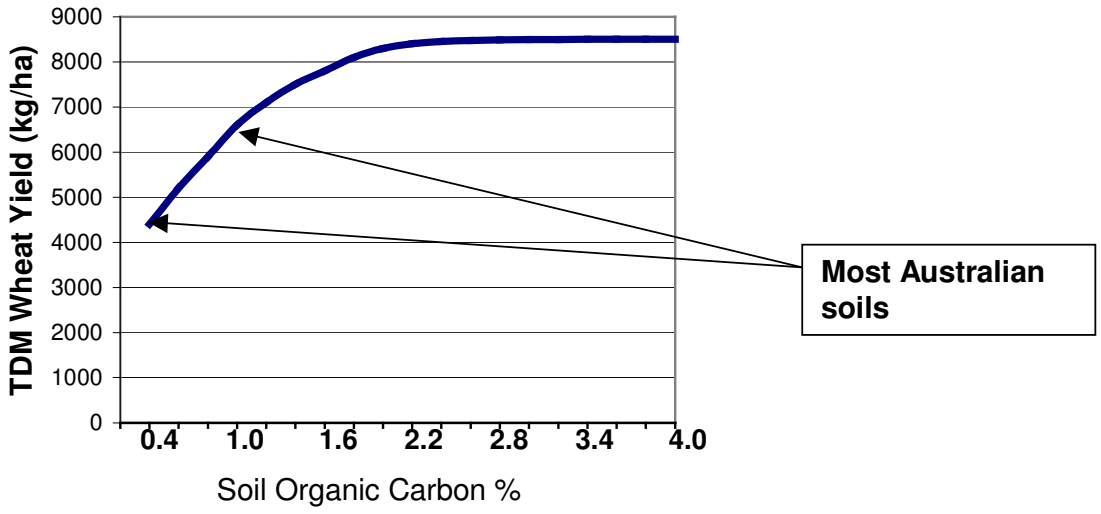
BIOGREEN
'Saves water naturally'

Application Rates

Approximately 75% of Australian soils have less than 1% organic carbon. Given this widespread and severe soil organic carbon deficiency, most soils will benefit from the on-going application of Biogreen Peat.

Graph 1 (Adapted from Jansen *et al.*, 1992) illustrates that Biogreen Peat application will result in greater long-term crop yields through improved soil health for low organic carbon content soils. Biogreen Peat leads to additional economic savings through more efficient water and fertiliser use.

Graph 1



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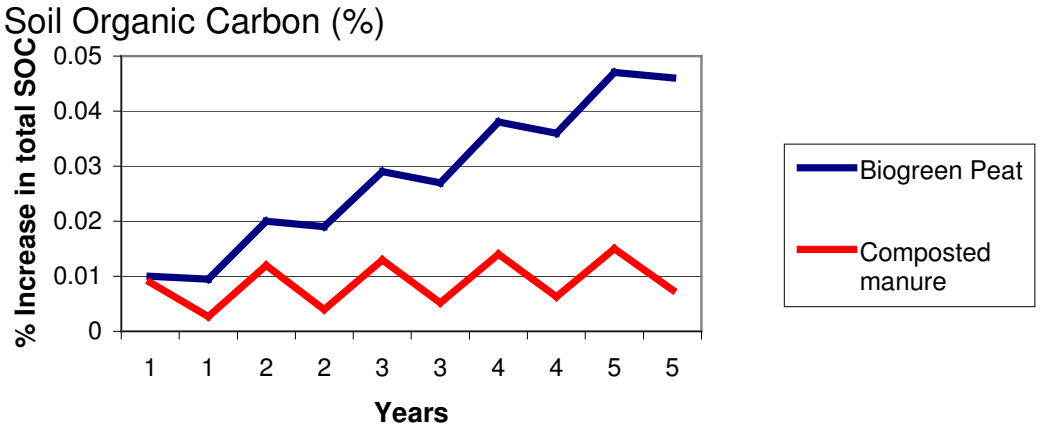
Graph 2 shows the estimated % increase in SOC from 250 kg/ha per annum applications of Biogreen Peat and composted manure over 5 years. Note the greater decomposition rate of the composted manure.

Graph 2



The table below gives estimates of the required application rates of Biogreen Peat for expected percentage increases in total soil organic carbon.

To increase total soil organic carbon by X% in the top 5cm of soil profile using Humus C™ Pellets

% Increase in Total SOC after one year	0.01	0.02	0.05	0.1	0.15	0.2
Biogreen Peat tonne/ ha	0.25	0.5	1.25	2.5	3.75	5.0

Note: (1) The indicated Biogreen Peat application rates and effects on soil organic carbon levels are estimates based on indicative organic carbon and moisture contents, soil bulk densities and decomposition rates.

(2) A soil's organic matter content is approximately double its organic carbon content.

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Key Analytical Parameters

Biogreen peat is a natural product formed over thousands of years under highly variable weather conditions. Therefore an exact analysis cannot be given. The table below represents the range in which parameters can be expected to lie based on tests conducted during 2005-2006.
Note: the processing of the peat leads to variations in moisture content and bulk density only. All other variables lie in the same range for each form of Biogreen peat.

Parameter	Unit	Untreated	10mm screened	4mm screened	Pelletised
Moisture content	% by weight	70 – 80	65 – 75	35 – 55	35 – 45
Bulk Density	Kg/L	0.70 – 0.8	0.65 – 0.75	0.50 – 0.60	0.65 – 0.75
pH	(1:5 water)	5.0 – 6.0	5.0 – 6.0	5.0 – 6.0	5.0 – 6.0
Conductivity	(µS/cm) (1:5 water)	500 – 1300	500 – 1300	500 – 1300	500 – 1300
C/N Ratio		20-30	20-30	20-30	20-30
Total Organic Matter	% dw	50 – 80	50 – 80	50 – 80	50 – 80
Total Organic Carbon	% dw	29 – 47	29 – 47	29 – 47	29 – 47
Total N	% dw	1.5 – 2.0	1.5 – 2.0	1.5 – 2.0	1.5 – 2.0
Total P	% dw	0.03 – 0.05	0.03 – 0.05	0.03 – 0.05	0.03 – 0.05
Total K	% dw	0.05 – 0.10	0.05 – 0.10	0.05 – 0.10	0.05 – 0.10
Total S	% dw	0.50 – 0.70	0.50 – 0.70	0.50 – 0.70	0.50 – 0.70
Total Ca	% dw	1.0 – 2.0	1.0 – 2.0	1.0 – 2.0	1.0 – 2.0
Total Mg	% dw	0.35 – 0.55	0.35 – 0.55	0.35 – 0.55	0.35 – 0.55
Total Na	% dw	0.10 – 0.15	0.10 – 0.15	0.10 – 0.15	0.10 – 0.15
Total Fe	% dw	0.65 – 0.80	0.65 – 0.80	0.65 – 0.80	0.65 – 0.80
Total Mn	ppm dw	20 – 45	20 – 45	20 – 45	20 – 45
Total Zn	ppm dw	5 –15	5 –15	5 –15	5 –15
Total Cu	ppm dw	10 – 20	10 – 20	10 – 20	10 – 20
Total Co	ppm dw	2 – 10	2 – 10	2 – 10	2 – 10
Total B	ppm dw	20 – 90	20 – 90	20 – 90	20 – 90
Total Mo	ppm dw	1 – 6	1 – 6	1 – 6	1 – 6
Exch. Ca^{2+}	meq /100 g	25 – 40	25 – 40	25 – 40	25 – 40
Exch. Mg^{2+}	meq /100 g	20 – 25	20 – 25	20 – 25	20 – 25
Exch. Na^{+}	meq /100 g	2 – 3.5	2 – 3.5	2 – 3.5	2 – 3.5
Exch. K^{+}	meq /100 g	0.2 – 0.4	0.2 – 0.4	0.2 – 0.4	0.2 – 0.4
Exch. H^{+}	meq /100 g	30 – 40	30 – 40	30 – 40	30 – 40
Exch. Sodium Percentage (ESP)	%	< 6	< 6	< 6	< 6
Cation Exchange Capacity (CEC)	meq /100 g	80 – 105	80 – 105	80 – 105	80 – 105

dw: dry weight

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