SUPERIOR

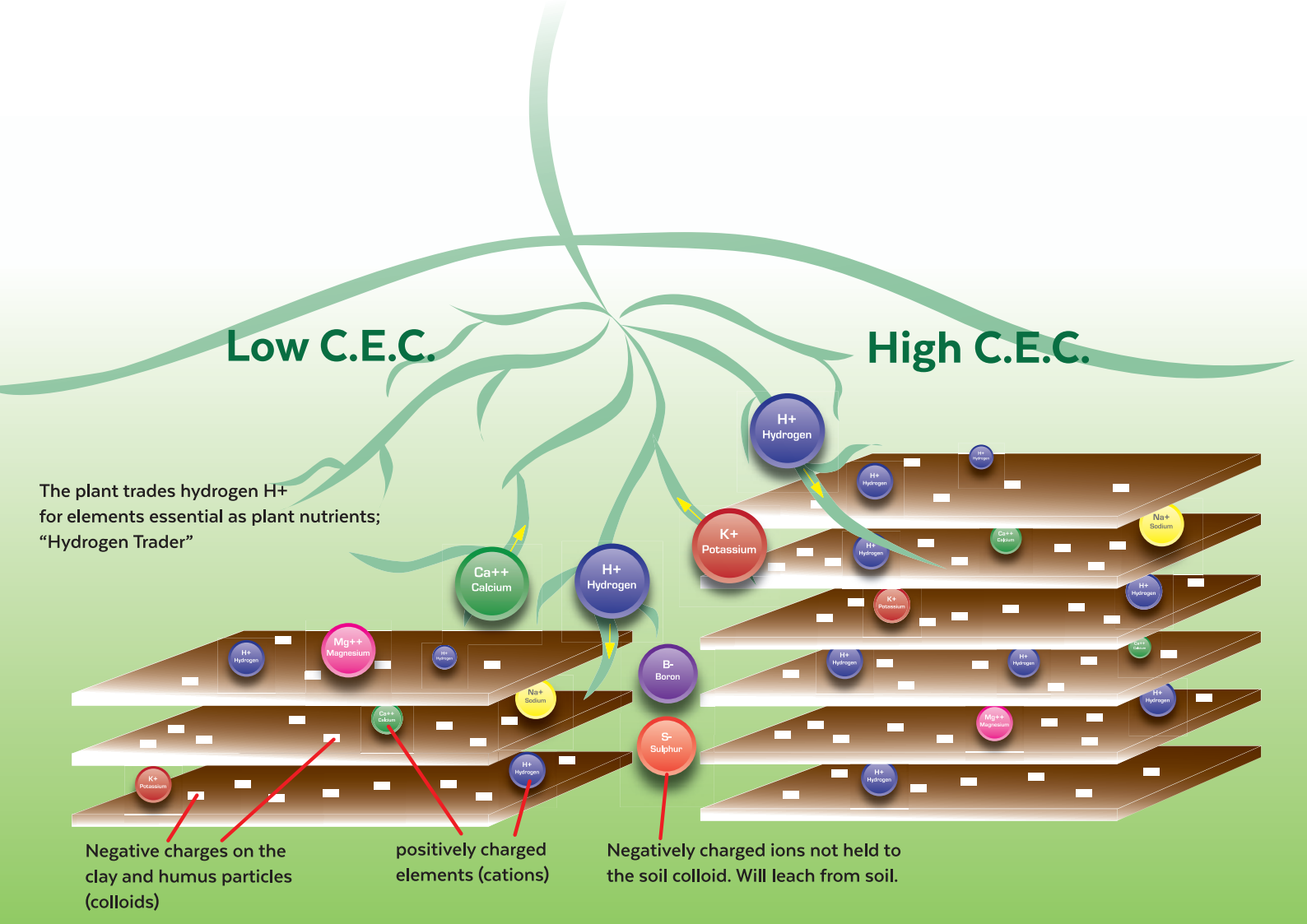
Cation Exchange Capacity (CEC)

What is C.E.C.?

The Cation Exchange Capacity (C.E.C.) tells us how much fertiliser your soil can hold.
For example, a soil with a C.E.C. of 12 will hold 100% more fertiliser than a soil with a C.E.C. of 6.

This is why we don't treat every soil the same

The 'holding capacity' of your soil is driven by the amount of fine clay and humus particles in your soil, also known as soil 'colloids'. These colloids have negative charges which attract and hold positively charged elements, e.g. calcium and magnesium.



Save money - only put on what you need!

Soil test examples

Low C.E.C. soil

Sample Depth	10cm
C.E.C. (M.E.)	5.56
Soil pH	6.00
Organic Matter %	2.40
Nitrogen (N) Kg/Ha	76.16

Base Saturation Percentage

		Desired %	Available%	Excess/(Deficit)%	Outcome
Calcium	(Ca++) (60–72%)	61.00%	57.53%	(3.47%)	Good
Magnesium	(Mg++) (10–12%)	19.00%	12.44%	(6.56%)	Very deficient
Potassium	(K+) (2.5–7.5%)	5.00%	6.15%	1.15%	Excellent
Sodium	(Na+) (0.5–2.5%)	1.50%	3.48%	1.98%	Excessive
Total Base Saturation (T.B.S.)		86.50%	79.60%	(6.90%)	

Expressed as kgs/ha

		Desired(kgs/ha)	Available(kgs/ha)	Excess/(Deficit)	Outcome
Calcium	(Ca)	1,519	1,433	(86)	Good
Magnesium	(Mg)	284	186	(98)	Very deficient
Potassium	(K)	243	299	56	Excellent
Sodium	(Na)	43	100	57	Excessive
Phosphates	(P205)	500	394	(106)	Good
Sulphate - S	(SO4)	112	49	(63)	OK

Trace Elements

		Desired(kgs/ha)	Available(kgs/ha)	Excess/(Deficit)	Outcome
Boron	(B)	3.4	1.5	(1.9)	Deficient
Iron	(Fe)	448.0	1,319.4	871.4	Excellent
Manganese	(Mn)	300.0	73.9	(226.1)	Deficient
Copper	(Cu)	11.2	1.6	(9.6)	Very deficient
Zinc	(Zn)	20.2	5.6	(14.6)	Very deficient
Cobalt	(Co)	3.4	1.7	(1.6)	Low
Molybdenum	(Mo)				

Note: values in brackets denote deficiencies

High C.E.C. soil

Sample Depth	10cm
C.E.C. (M.E.)	52.3
Soil pH	6.50
Organic Matter %	6.60
Nitrogen (N) Kg/Ha	120.96

Base Saturation Percentage

		Desired %	Available%	Excess/(Deficit)%	Outcome
Calcium	(Ca++) (60–70%)	69.00%	66.59%	(2.41%)	Very good
Magnesium	(Mg++) (10–12%)	11.00%	14.98%	3.98%	High
Potassium	(K+) (2.5–7.5%)	5.00%	3.92%	(1.08%)	OK
Sodium	(Na+) (0.5–2.5%)	1.50%	2.12%	0.62%	High
Total Base Saturation (T.B.S.)		86.50%	87.61%	1.11%	

Expressed as kgs/ha

		Desired(kgs/ha)	Available(kgs/ha)	Excess/(Deficit)	Outcome
Calcium	(Ca)	16,167	15,602	(565)	Very good
Magnesium	(Mg)	1,546	2,106	560	High
Potassium	(K)	2,284	1,791	(493)	OK
Sodium	(Na)	404	571	167	High
Phosphates	(P205)	500	616	116	Excellent
Sulphate - S	(SO4)	112	74	(38)	Good

Trace Elements

		Desired(kgs/ha)	Available(kgs/ha)	Excess/(Deficit)	Outcome
Boron	(B)	3.4	3.2	(0.2)	Good
Iron	(Fe)	448.0	217.3	(230.7)	Deficient
Manganese	(Mn)	300.0	159.0	(141.0)	OK
Copper	(Cu)	11.2	1.6	(9.6)	Very deficient
Zinc	(Zn)	26.9	19.3	(7.6)	Deficient
Cobalt	(Co)	3.4	2.2	(1.2)	Low
Molybdenum	(Mo)				

Note: values in brackets denote deficiencies

Recommendations: Base Saturations (Calcium, Magnesium, Potassium and Sodium)

Magnesium

The low C.E.C. soil requires 1,000 kg/ha of the Superior Mix to provide sufficient magnesium whereas the high C.E.C. soil requires nil.

Calcium

The low C.E.C. soil requires 450 kg/ha of calcium limestone to address the calcium deficiency whereas the high C.E.C. soil requires 2,800 kg/ha of calcium limestone! If you applied 2,800 kg/ha of lime to the low C.E.C. soil, you will have not only wasted money but created a severe deficiency in magnesium and other essential elements leading to reduced production.

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