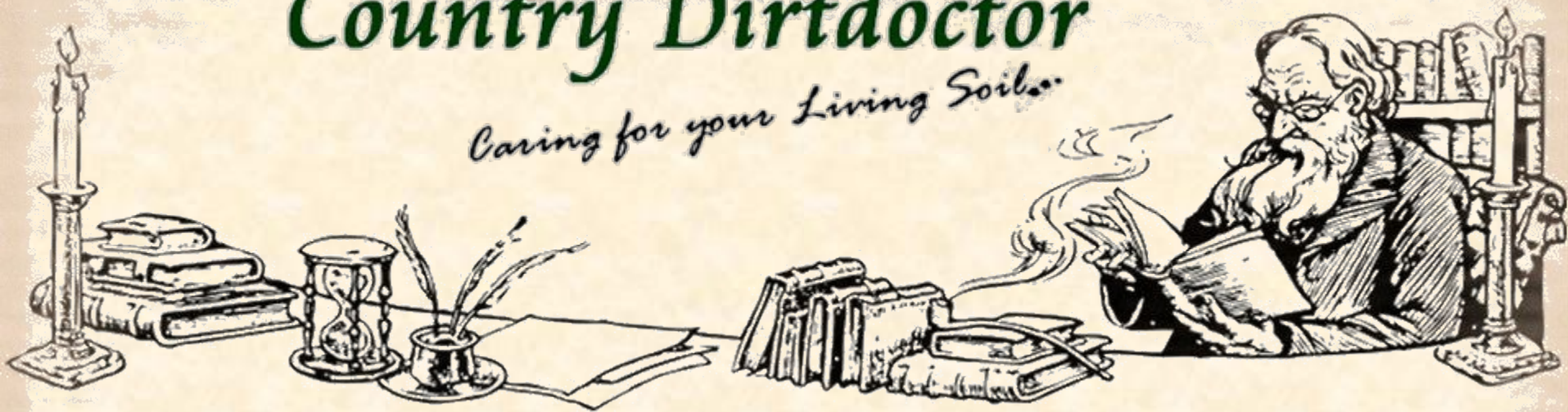


# Country Dirtdoctor

*Caring for your Living Soils*



## Important Points to Remember...

- Symbiosis – Because they Must!
- Soil – definitely!
- Lime – a lot!
- Magnesium - ?!
- Coarse Lime - ???
- Phosphorus – the Wrong kind!
- Fish (emulsion/hydrolosate) – NEVER!!!

## 1. Soil Structure & Friability:

Exchangeable cation	Results		Target levels	
	me/100g	% CEC	me/100g	% CEC
Calcium	13.18	65.4%	13.9	69%
Magnesium	6.44	32.0%	4.0	20%
Potassium	0.17	0.8%	1.6	8%
Sodium	0.29	1.4%	0.6	3%
Other Cations	0.06	0.3%	0.0	0%
<b>Cation Exchange Capacity</b>	<b>20.1</b>			
Ca/Mg ratio	2.0		3.5	
Base Saturation	99.7%		90% +	

## 2. Soil Mineralogy:

		Optimum (ppm)
Total Calcium	3090 ppm	7050
Total Magnesium	3010 ppm	2820
Total Ca/Mg ratio	1.03	2.5

## 3. Other aspects of the soil environment:

		Optimum
Total Phosphorus	346 ppm	752
Total Organic Carbon	2.6%	
Total Nitrogen	0.3%	
Carbon-Nitrogen ratio	9:1	9:1 to 13:1

*If the C:N ratio is below 9:1, application of a good quality liquid humate is worthwhile.*

#### 4. Soil Fertility & Plant Nutrition:

##### Test Results & Comments

	Result	Preferred soil fertility	For Adequate Symbiosis
pH (water)	6.0	7.0-8.0	Low
pH (CaCl <sub>2</sub> )	5.2	6.0-7.0	Low
EC (dS/m)	0.07	<0.2	Satisfactory

##### Major nutrients:

Nitrate Nitrogen	23.0 ppm	4.5	
Ammonium Nitrogen	4.0 ppm	5.5	
Colwell Phosphorus	18.0 ppm	59 or less	Adequate
Colwell Potassium	65 ppm	197	Low
KCl 40 Sulphur	4.3 ppm	2.2	Adequate

## 5. Summary of Required Actions:

Preparation is the key to success in Truffle production and we recommend allowing sufficient time for proper site preparation. **The soil improvement applications below need to be incorporated into the top 20cm of soil** and given the necessary time to take effect. Of course soil is not entirely predictable so it is also wise to re-test after 12 months to check if any further 'adjustments' are required.

If you have already established your Truffière the recommendations for Lime, Dolomite and Gypsum can be surface applied - within certain limitations (see notes attached). However, any recommendations for coarse materials or rock phosphate should only be applied when there is the opportunity to fully incorporate them into the soil.

### Requirements for soil structure and friability

Fine Limestone	2.9 t/ha
Fine Dolomite	0.0 t/ha
A-Grade Gypsum	0.0 t/ha

*Surface applications (to an established Truffière) of Lime or Dolomite should not exceed 2.5 t/ha and Gypsum should not be more than 5 t/ha. Larger amounts can be safely applied if cultivated into the same depth of soil as the sample.*

**NB.** If there is no Lime recommended above, but there is an amount for Dolomite, Magnesite is an alternative:

Fine Magnesite	0.0 t/ha
----------------	----------

### Minimum applications needed to adjust the mineral constitution of the soil

Coarse Limestone	110 t/ha	plus:	<b>OR</b>	114 t/ha	Coarse Lime	plus:
Coarse Dolomite	22 t/ha			10 t/ha	Coarse Magnesite	

Rock Phosphate (Apatite)	1.1 t/ha
--------------------------	----------

### Requirements for Plant Nutrition:

Nitrogen	0 kg/ha
Potassium	0 kg/ha
Sulphur	0 kg/ha

*Apply as organic fertiliser in July-Aug. For an established Truffière, apply outside the Brûlé.*