

# FERTILISERS

## FACTS & FALACIES

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# Fertiliser Industry

Big (\$2b)  
Deregulated

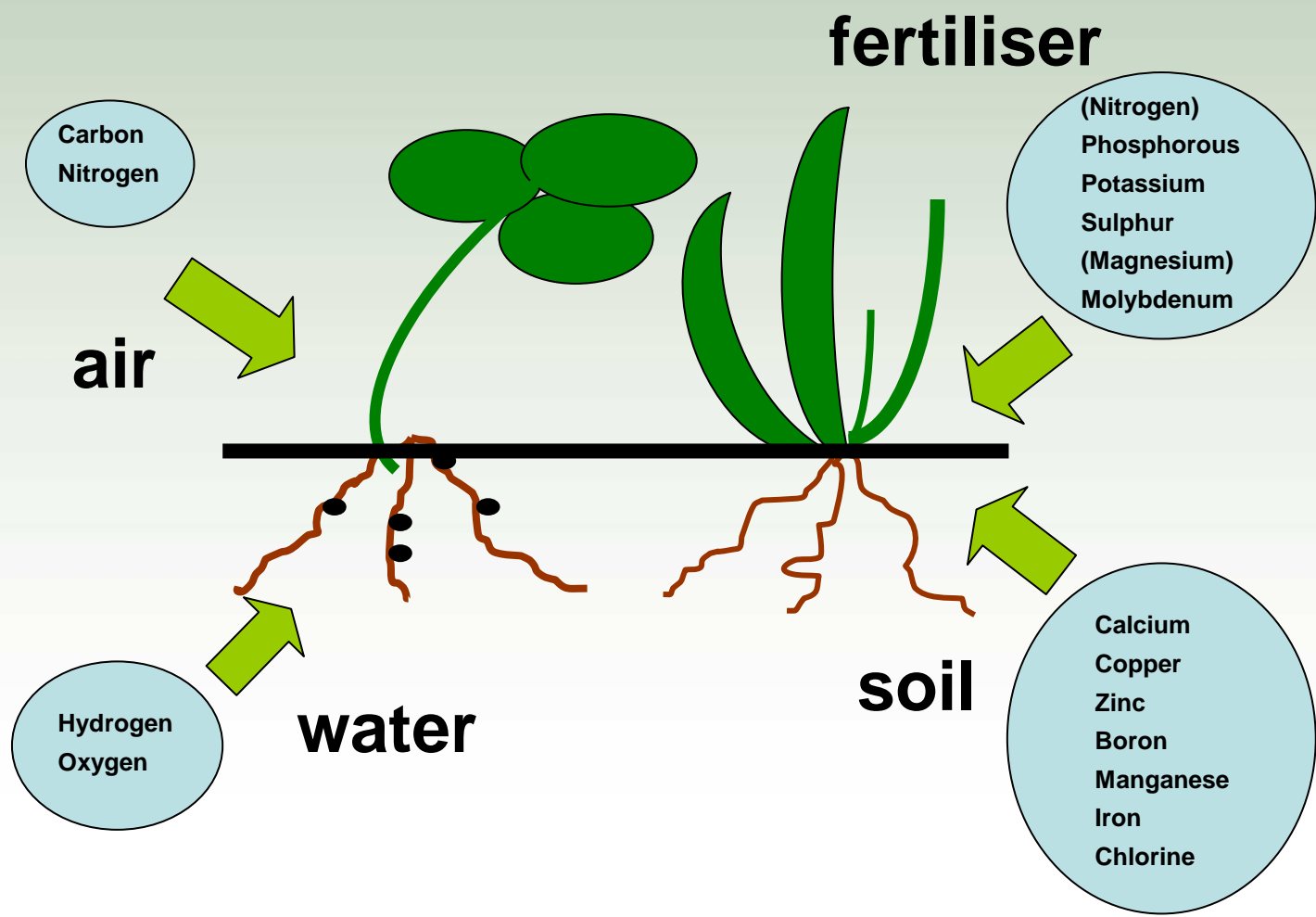
# A Communication Breakdown

science & farmer

Plants need

16

nutrients



# 2 others

for animal health

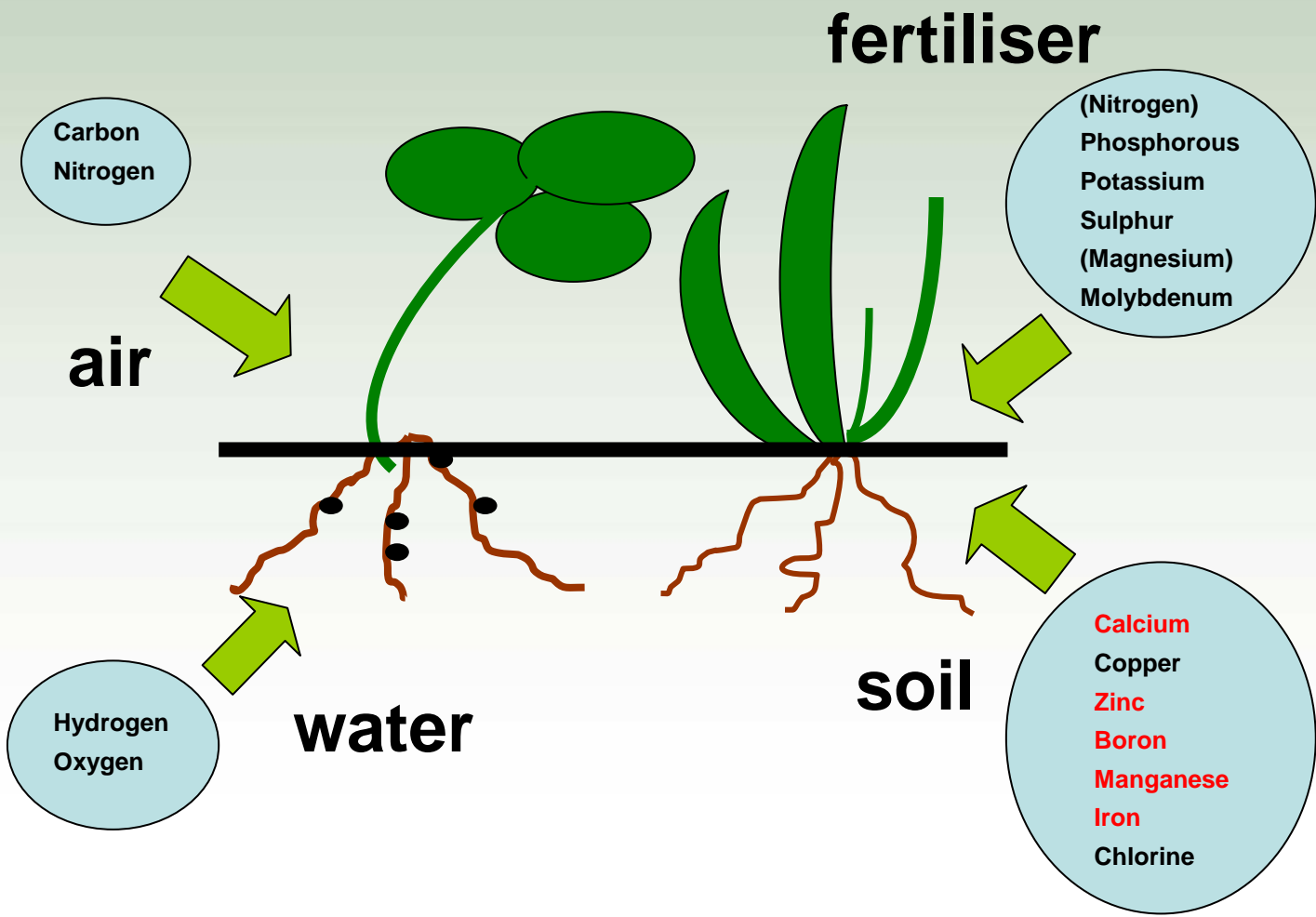
## Selenium and Cobalt

# New Zealand Soils

## 8 nutrients

Pastures = **6** (N, P, K, S, Mg, Mo)

Animals = **2** (Se, Co)



# Calcium

- Calcium deficiency unknown in NZ
- Lime (Calcium carbonate)
- Carbonate is the active ingredient

# Base Saturation Ratios

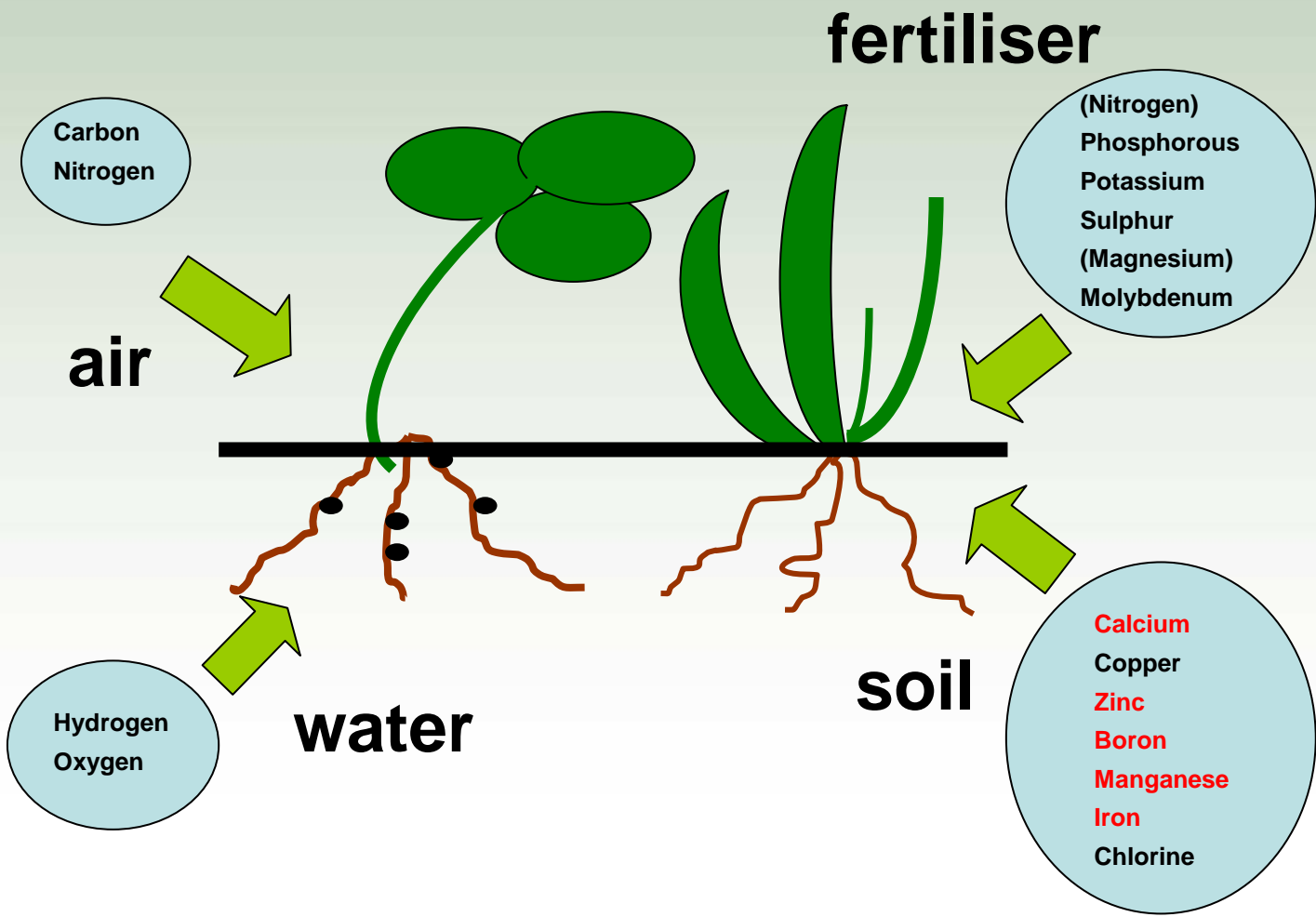
## Two theories of Plant Nutrition

1. Quantity Theory
2. Ratio Theory

# Soil Laboratories

- Brookside (USA)
- Hills Laboratory (NZ)
- ARL (Ravensdown)

“Pumping out misleading soil test results”



# What About?

Zinc (Zn)

Boron (B)

Manganese (Mn)

Iron (Fe)

# Unlocking Nutrients?

- 1) Correct soil nutrient ratios and pH  
= nutrient unlocked?
- 2) Phosphate Retention  
= means lost = locked up?

# Nutrient Utilization

80-90%

# Lime: Finer is better?

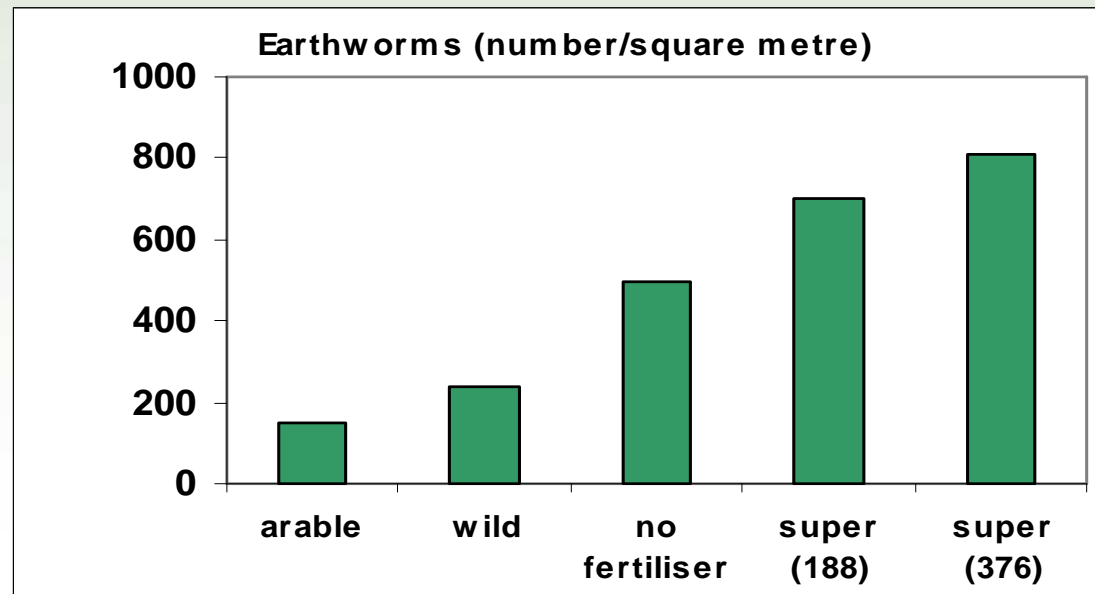
1. Active Ingredient = carbonate
2. 1000 kg carbonate = 0.1 pH increase
3. 100 kg carbonate = 0.01 pH increase!!!

100 kg fine lime  $\neq$  1000 kg ground limestone

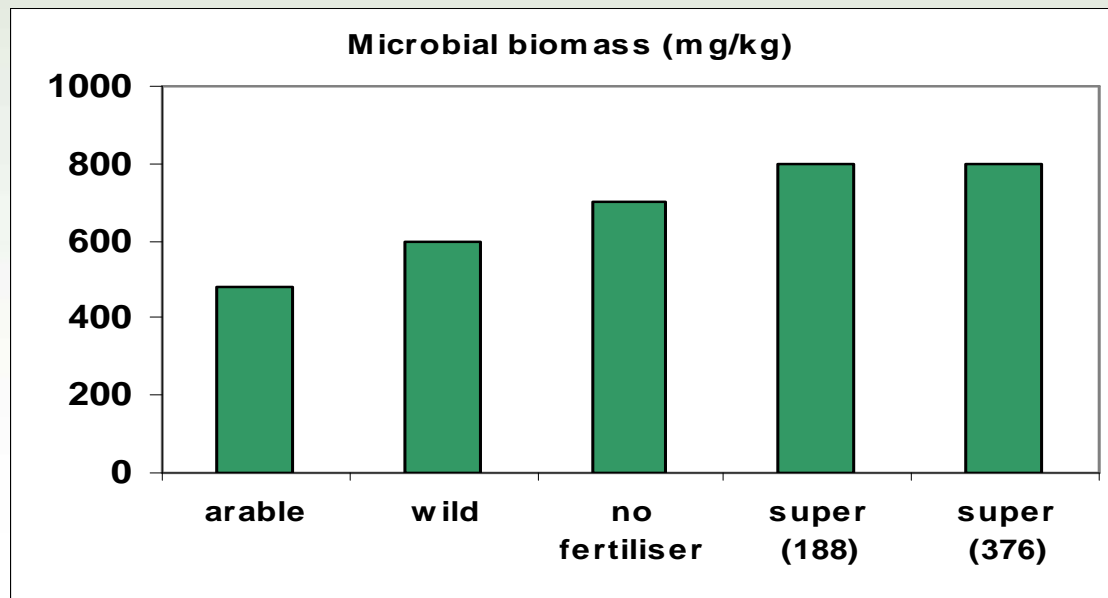
# Solid v liquid v slurry

- Some legitimate reasons
  - horticulture (Ca and trace elements)
  - pastoral (e.g. trace elements)
- Broad-acre
  - solid = liquid = slurry
  - use the cheapest (always solid)

# Chemical Fertilisers kill soil biology?



# Chemical Fertilisers kill soil biology?



# Organic v Conventional

Organic is better for the environment?

Organic is better quality?

# Thoughts

“If it is sounds too good to be true  
it probably is” Dr John Roche

“The only antidote for pseudo-  
science is science itself” Carl Sagan

# My Goals

I want

- Healthy soils
- Clean water and air
- Quality foods

*“Science is the only way forward”*

# Further Reading

## 1. Fertiliser Facts and Fallacies

Exposing 50 Common myths

## 2. The Fertiliser Review

Free on-line @ [www.agknowledge.co.nz](http://www.agknowledge.co.nz)