

Woolgoolga BLUEBERRIES AND SOIL HEALTH

Greg Reid

Soil Nutrient Report

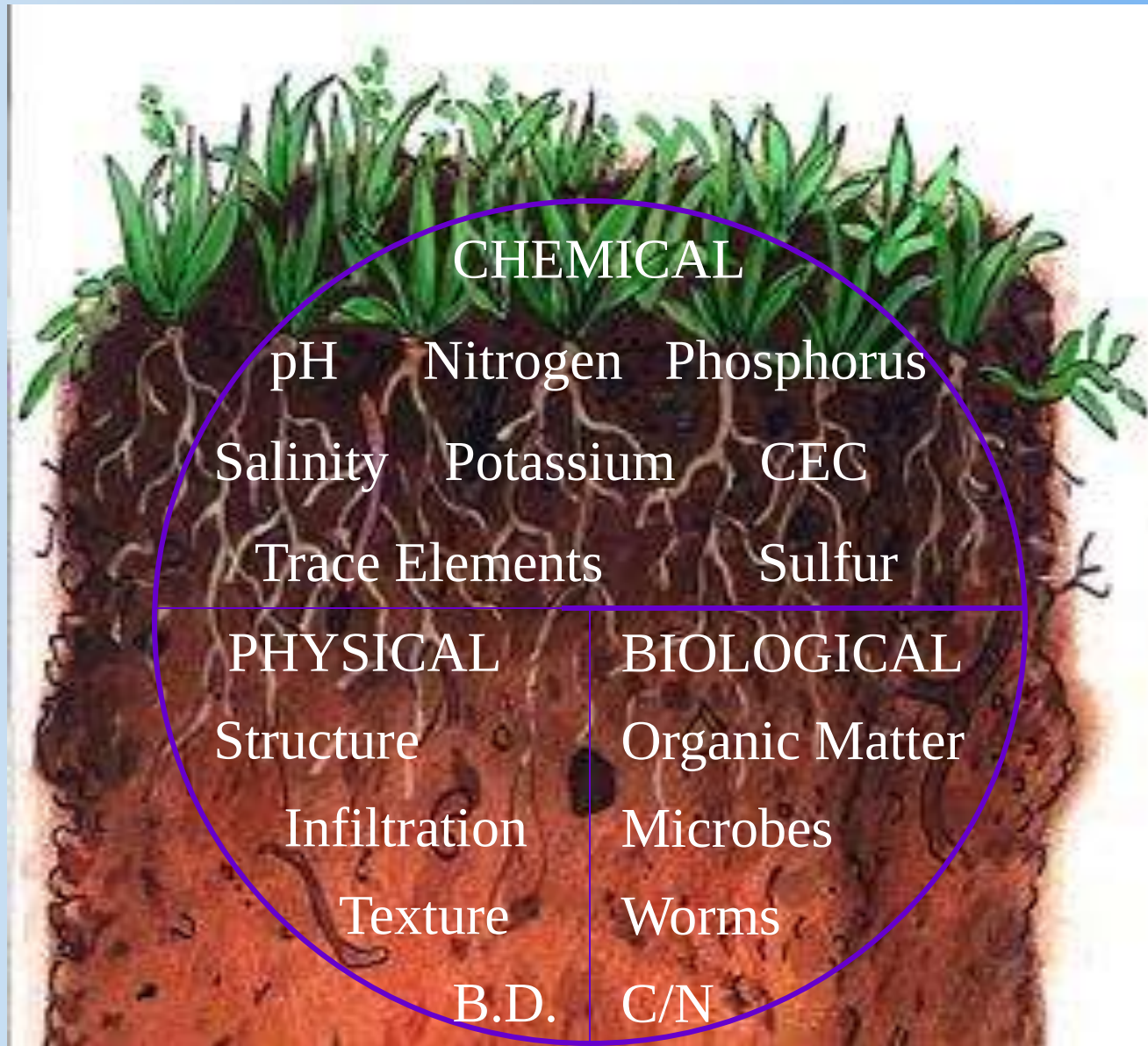
Laboratory No		Limit of reporting	2654
Sample ID	Unit		Brick 1
Bray Phosphorus	mg/kg	0.06	21
Nitrogen	%	0.02	<0.02
pH (CaC12)	pH	0.04	7.99
Aluminium	%	1	0.079
Arsenic	mg/kg	1.0	2
Boron	mg/kg	1.0	2.3
Calcium	%	0.0001	0.047
Cadmium	mg/kg	0.9	<0.9
Cobalt	mg/kg	1.0	16
Chromium	mg/kg	1.0	<1
Copper	mg/kg	1.0	<1
Iron	%	1.0	0.064
Potassium	%	0.0001	0.022
Magnesium	%	0.0001	0.011
Manganese	mg/kg	0.9	110
Molybdenum	mg/kg	0.7	<0.7
Sodium	%	0.0001	0.007
Nickel	mg/kg	0.9	20
Phosphorus	%	0.0001	0.019
Lead	mg/kg	4.0	<4
Sulphur	%	0.0001	0.0003
Vanadium	mg/kg	1.0	7.4
Zinc	mg/kg	2.0	3.7
Exchangeable cations			
Aluminium	cmol(+)/kg	0.05	<0.05
Calcium	cmol(+)/kg	0.04	0.32
Potassium	cmol(+)/kg	0.03	0.056
Magnesium	cmol(+)/kg	0.03	0.12
Sodium	cmol(+)/kg	0.03	<0.03

■ Remedies

- Nitrogen
- Potassium
- Sulfur

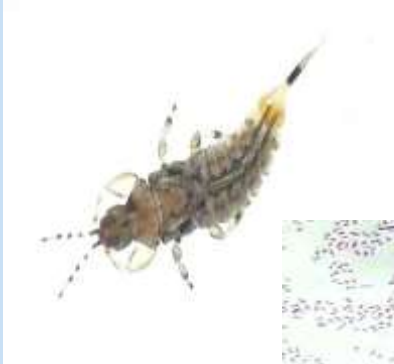


Properties of Healthy Soil

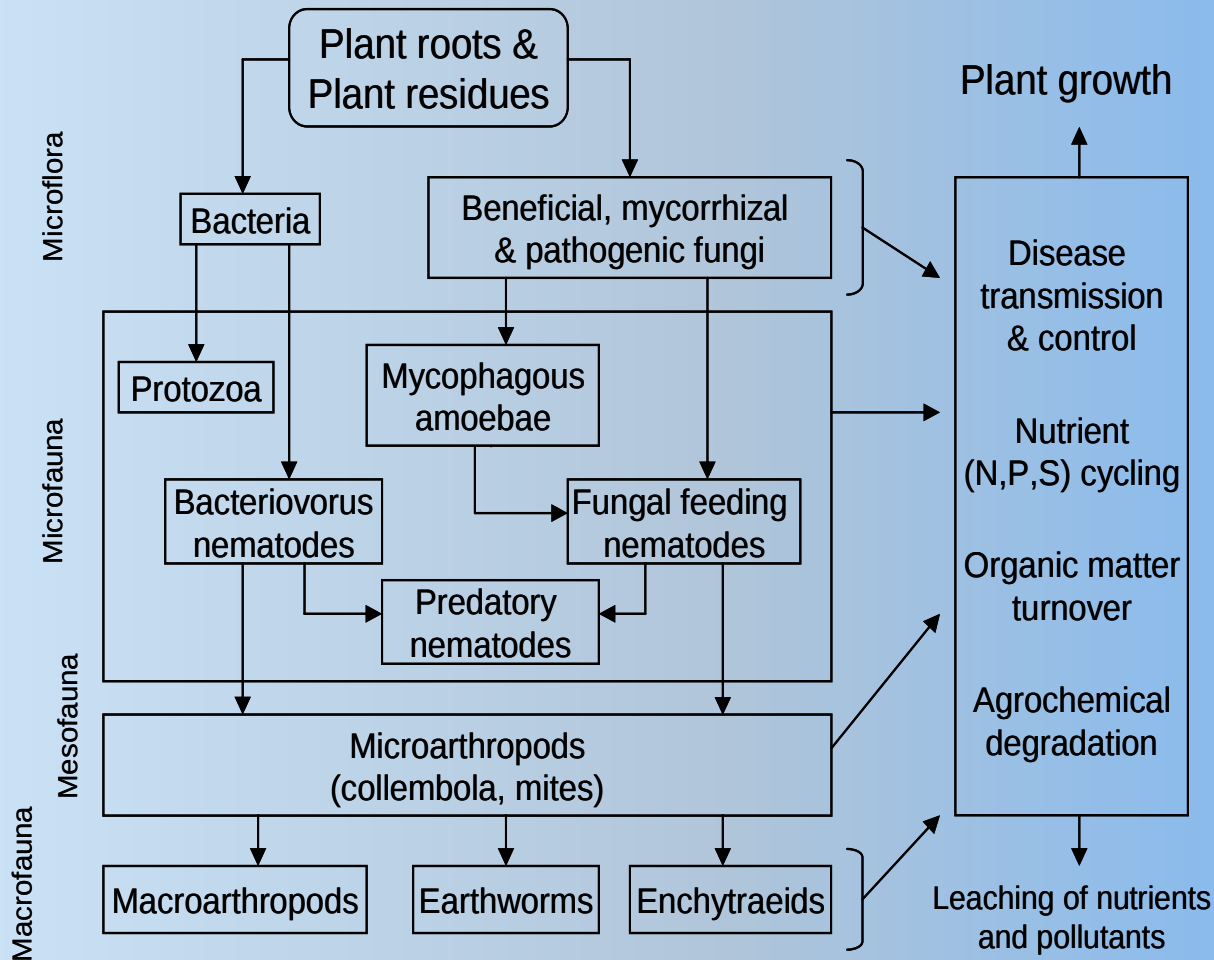


Source Image: "Soil Sense"

Soil Biology



Soil Biology Interactions



Source Data: "Soil Biology Notes"

Replanting



Soil Sterilisation

Steam



Solarisation



Chemical Control

- Allette
- Phostrol
- Prophyt
- Ridomil



- Preventative
- On going costs
- Organic Cert
- Kills beneficials
- Cumulative effects

Biological Control



Trichoderma harzianum – Plant Shield

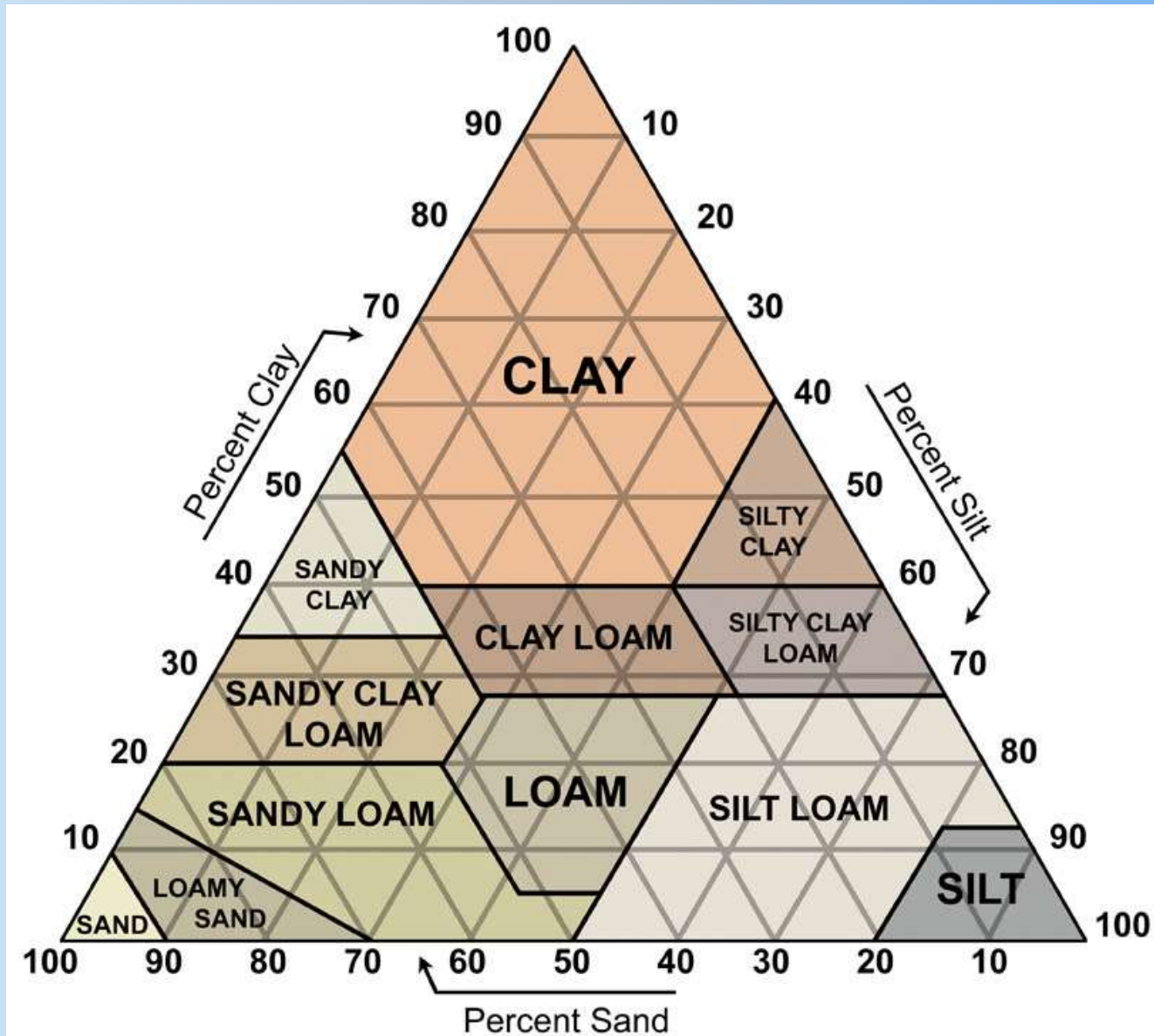
Gliocladium virens – Soil Guard

Treating the consequence and not the cause

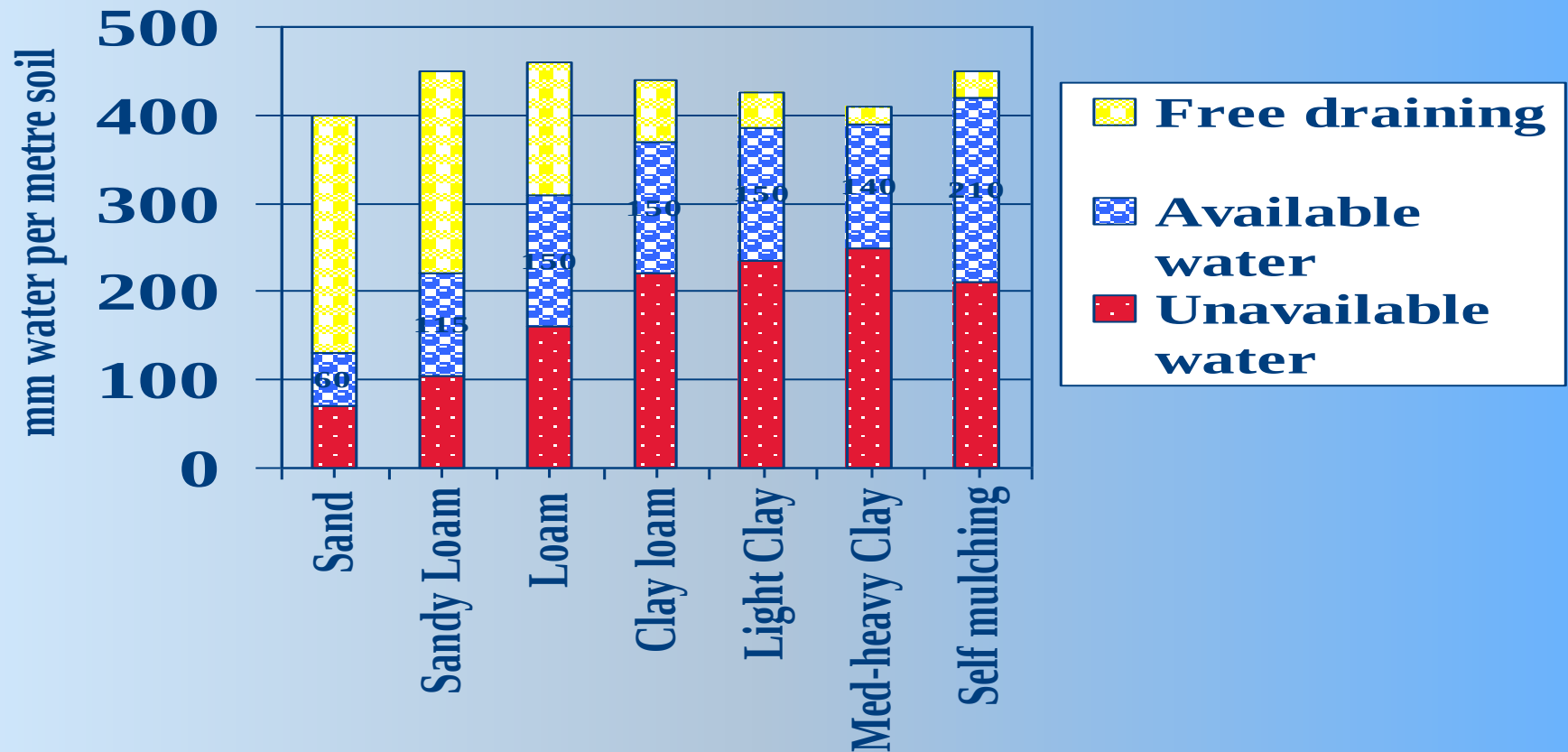
Waterlogging



Soil Texture



Available water



SOIL STRUCTURE



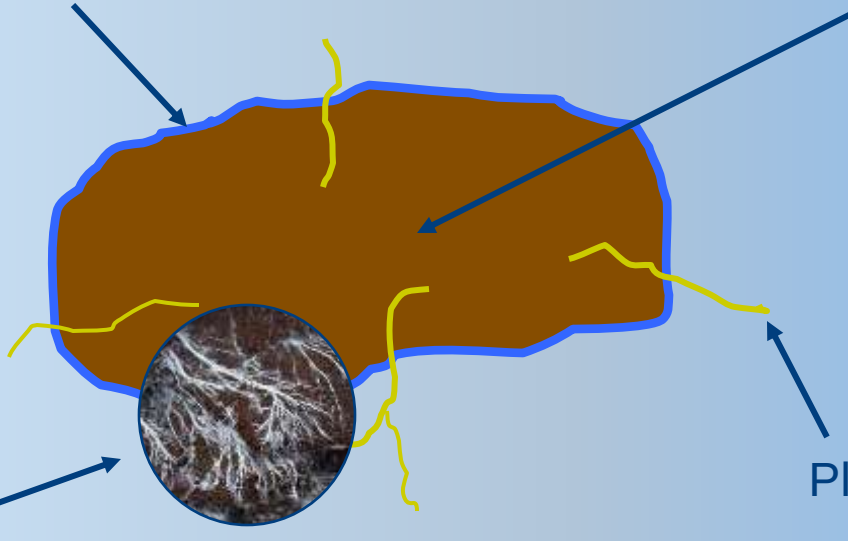
A miniature world

Surface Water
Storage and
aerobic
organisms

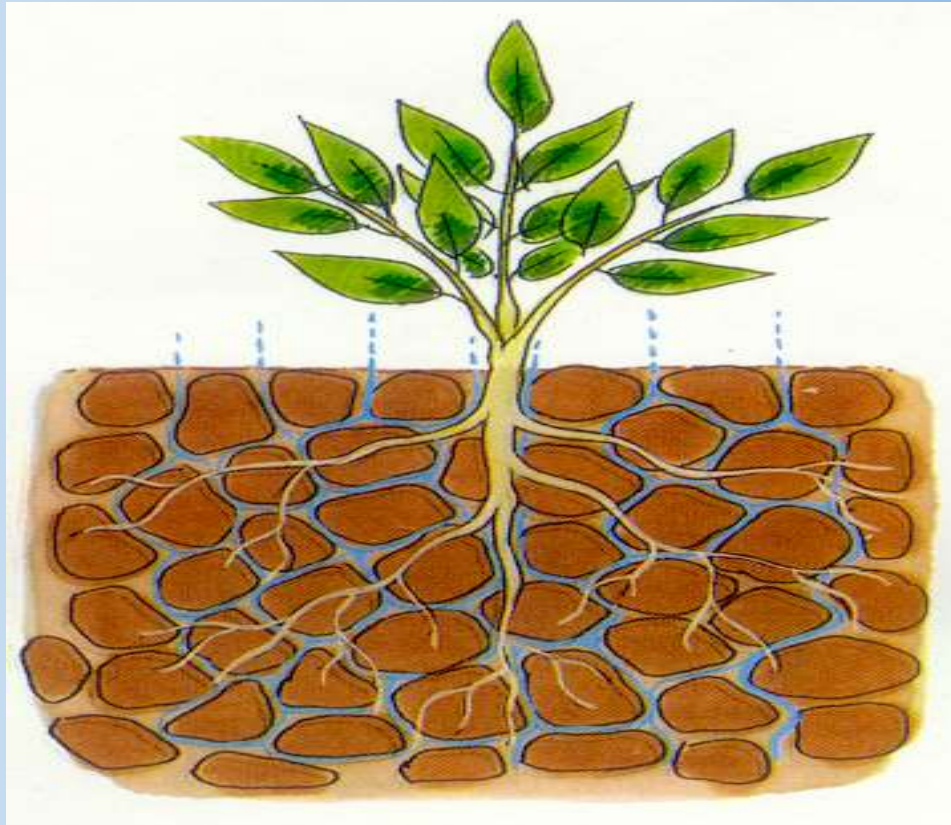
Deep moisture
storage and
ancient anaerobes

Plant root highways

Fungal Hyphae
and glomalin
glue



INFILTRATION & DRAINAGE



Gypsum

Only if Ca/Mg Ratio less than 2



Slaking Test

If severe check sodium % less than 2

Organic Matter



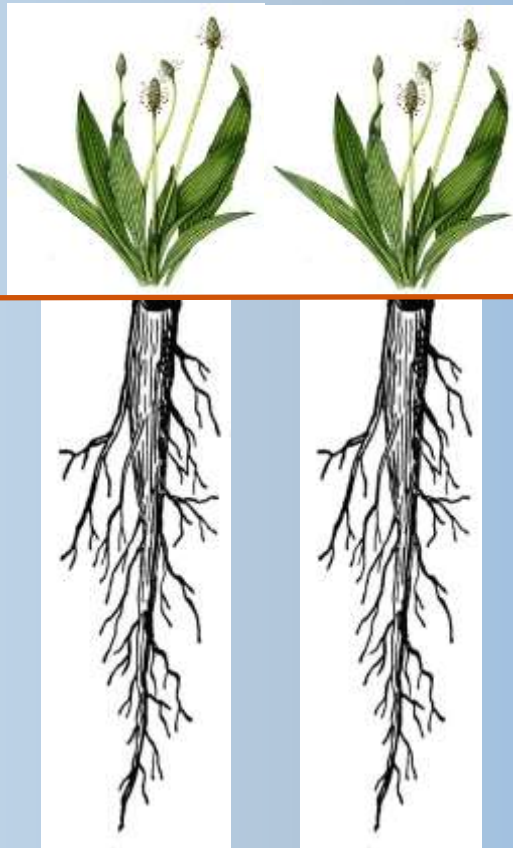
Spike Aeration



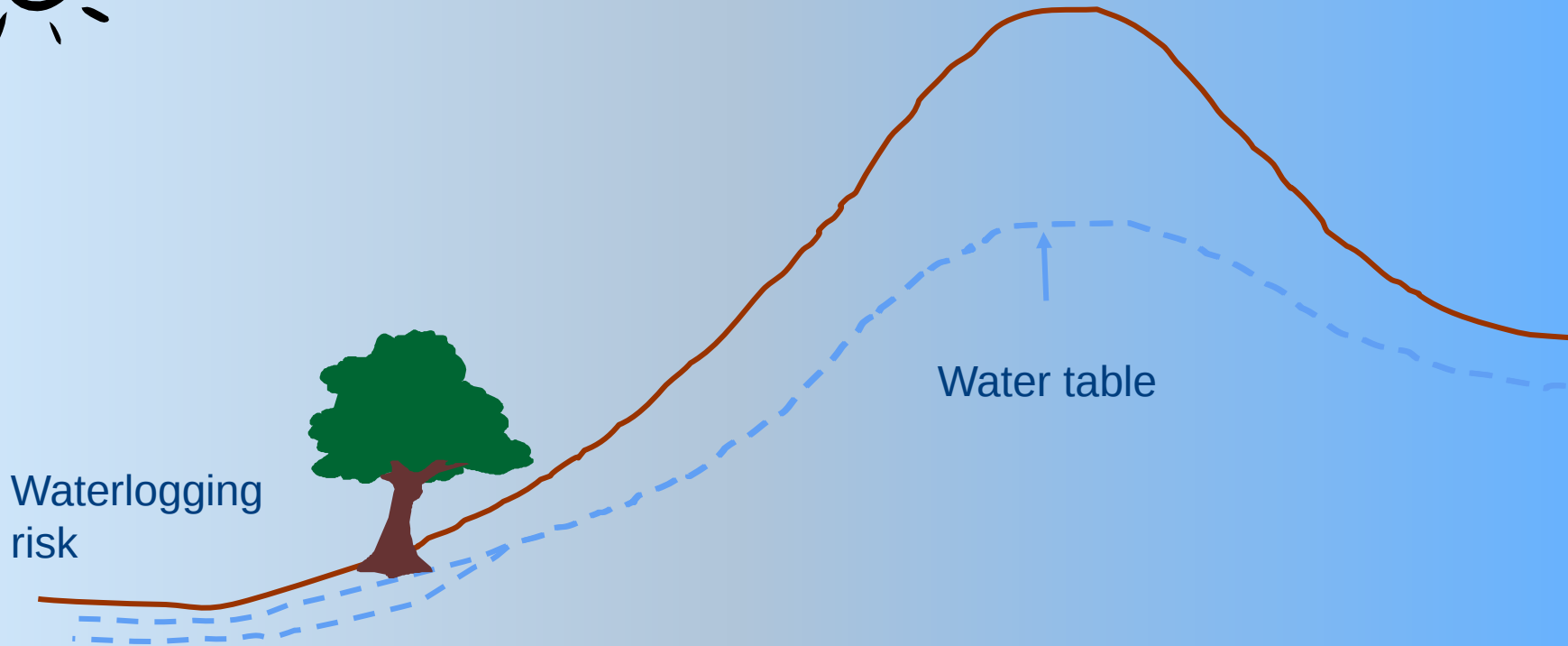
Inter-row plants

Root penetration
Large leaf area
Mulch supply
(Indian Mustard)

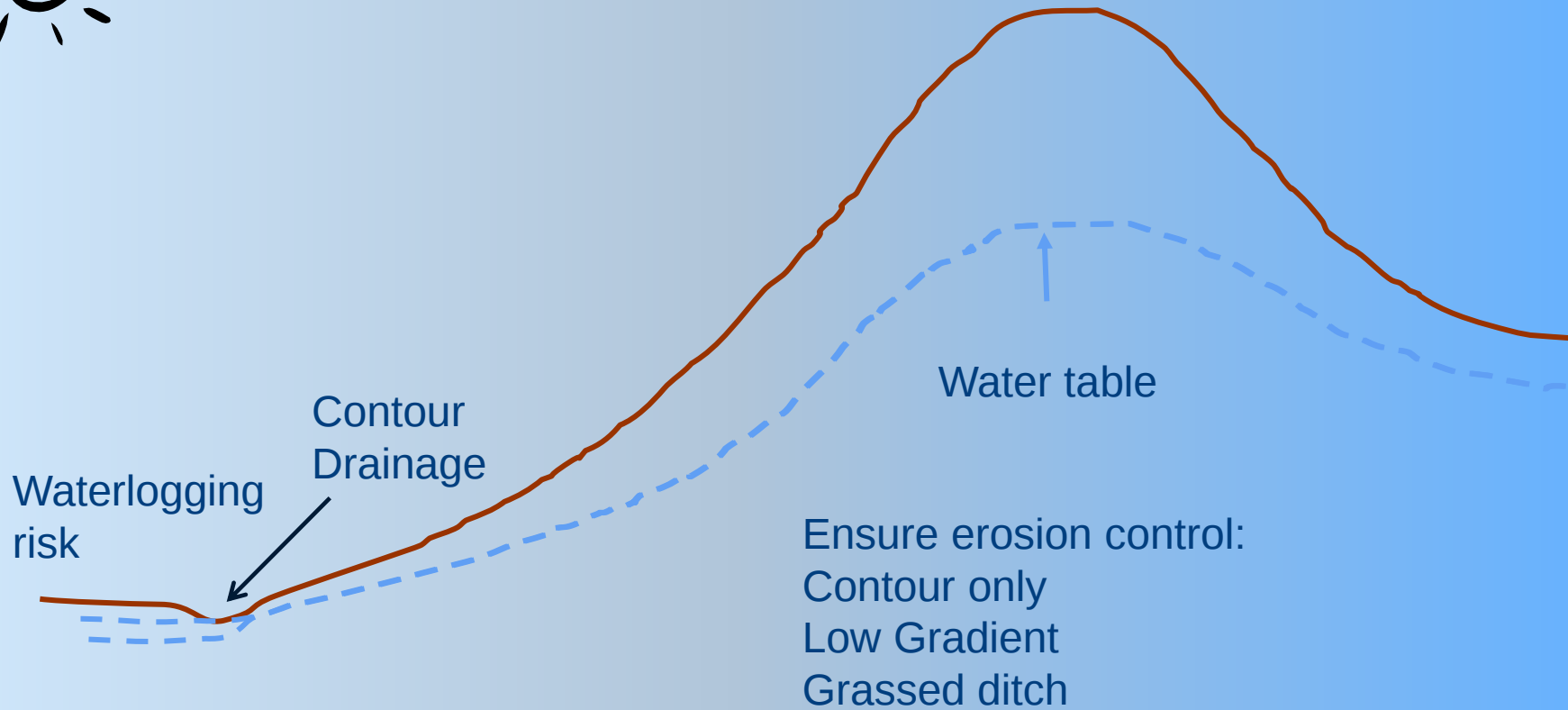
Forage Plantain



Intercept Tree Line



Shallow Contour Drainage



Raised Plantings



- Higher cost
- Source “GOOD” soil
- Higher water demand
- Mulching more difficult
- Weed control
- Spacing can be changed

Infiltrrometer

At least 24hrs after rain

1cm in less than 30 sec

Muddy water means low organic matter

