

A-GrowHumac



Soil Fungi Food

LIVING SOIL
solutions

The logo features the word "LIVING" in a large, green, serif font. To its right is the word "SOIL" in a large, dark brown, serif font. A stylized tree with green leaves and brown roots is positioned such that its trunk and roots are integrated into the letter "O" of "SOIL". Below "SOIL" is the word "solutions" in a smaller, dark brown, lowercase sans-serif font.

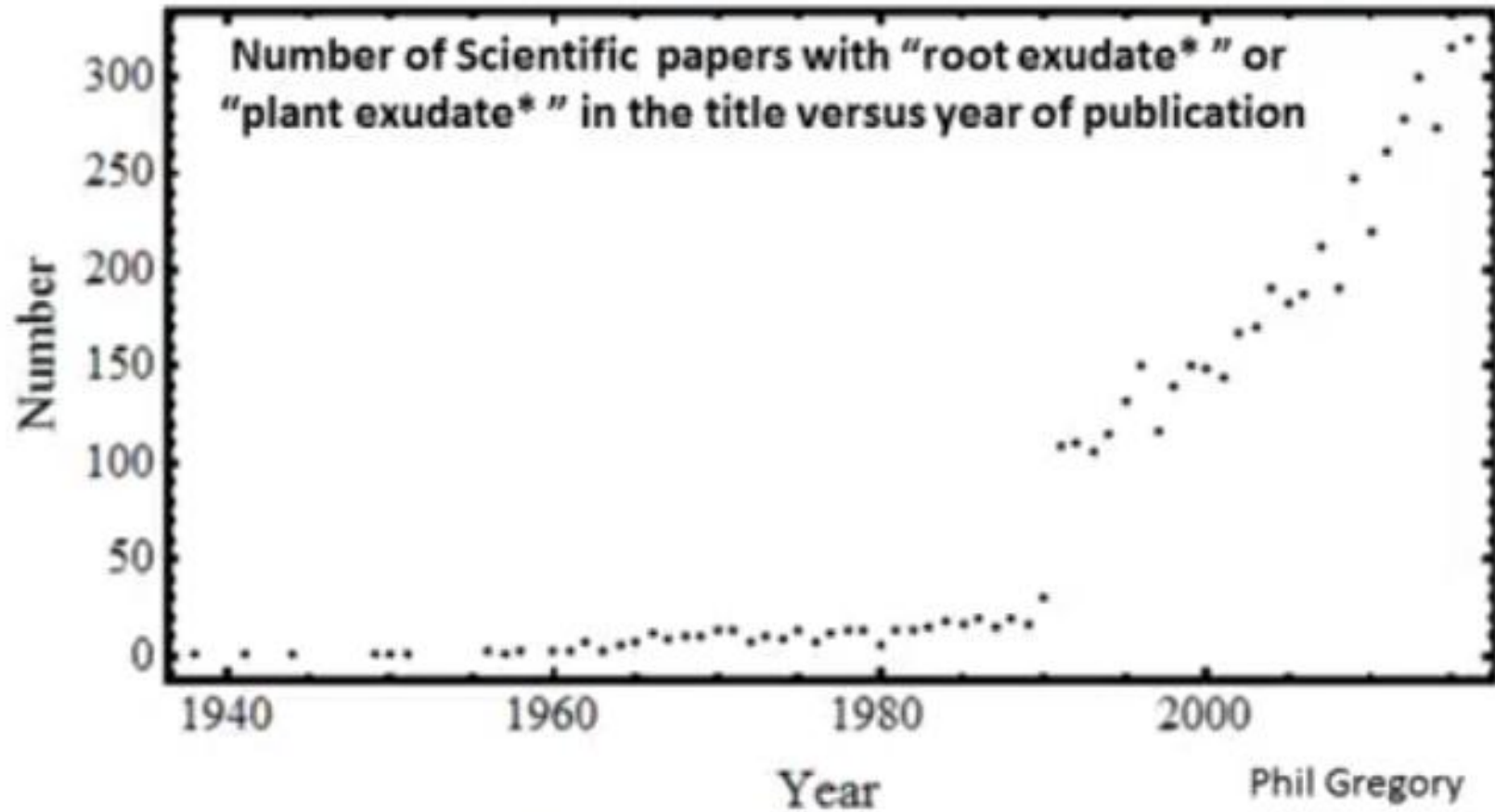
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Our Company Overview:

We are a renowned organization and has been established in the agriculture business since 2000. Our first research team started in India. We made a special place in the business and known for producing excellent products that our clients eventually place the ultimate trust on us, which we try to live up to with each passing day and through our new progressive continuous discoveries.

One indicator of the recent revolution in soil biology (sudden jump in publication rate in 1991)



One of the key papers indicating the important role of soil biology:

"Interactions of Bacteria, Fungi, and their Nematode Grazers: Effects on Nutrient Cycling and Plant Growth," by Russell E. Ingham, J. A. Trofymow, Elaine R. Ingham, and David C. Coleman, *Ecological Monographs*, Vol. 55, No. 1 (Mar., 1985), pp. 119-140. (672 citations to 2016)

1.

Humic Acid (20%)

2.

Proteinogenic Amino
Acids (20%)

3.

Soluble NPK Nutrients

4.

Natural Enzymes

5.

Bio Stimulants

6.

B Complex Vitamins

7.

Natural Highly Stable
Carbon Compound



AGROW SYNERGY (M) SDN. BHD. (860265 D)

Technology & Innovation in Agriculture



SMART SOIL
SOLUTIONS

A-GrowHumac

feed the soil
and the plant

PLANT NUTRIENTS

ORGANIC MATTER

MICRO-ORGANISMS

SOIL NUTRIENTS

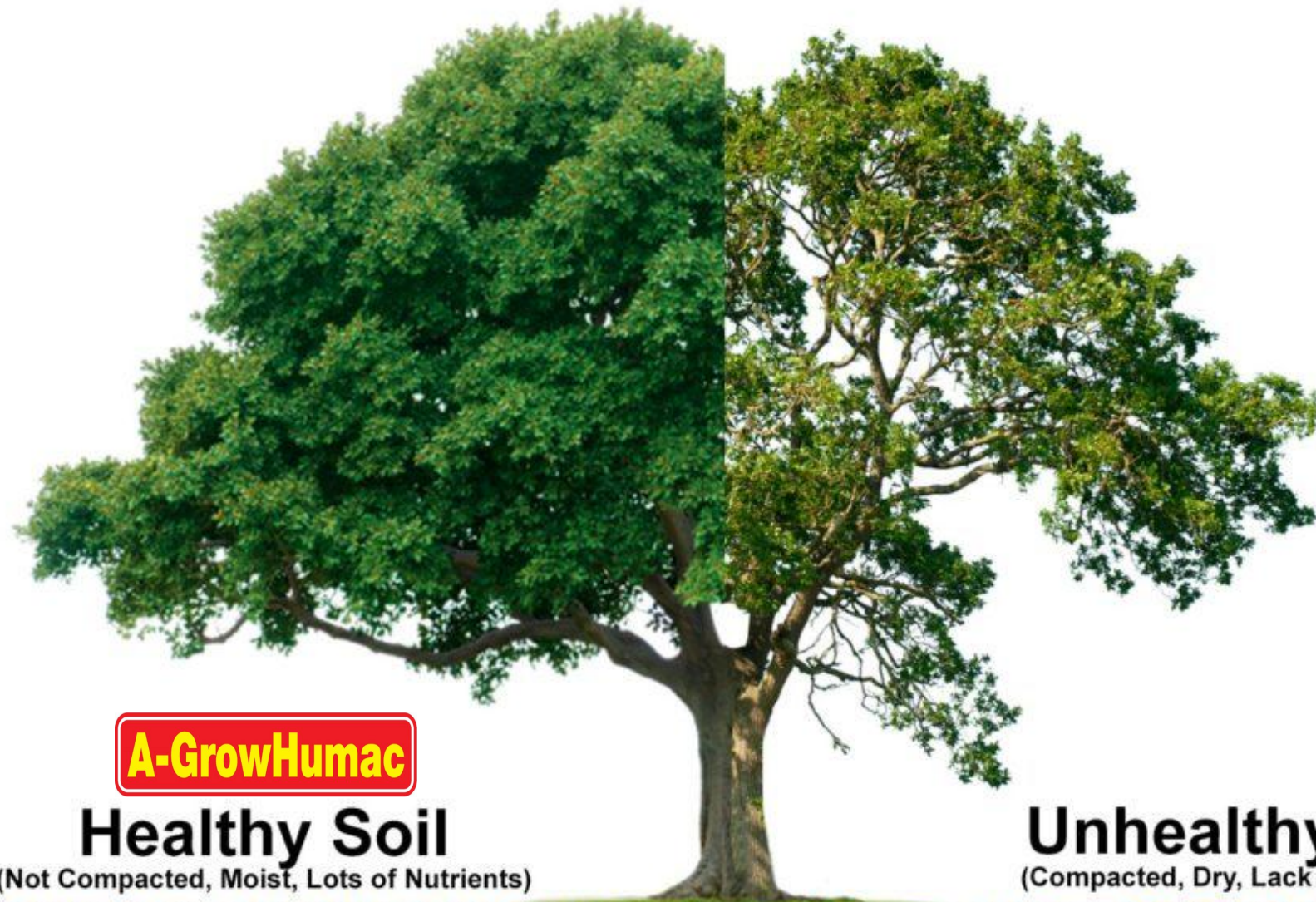


TRADITIONAL *fertilizers*

feed only the plant
and damage the soil

PLANT NUTRIENTS





A-GrowHumac

Healthy Soil

(Not Compacted, Moist, Lots of Nutrients)

Unhealthy Soil

(Compacted, Dry, Lack of Nutrients)



Dirt

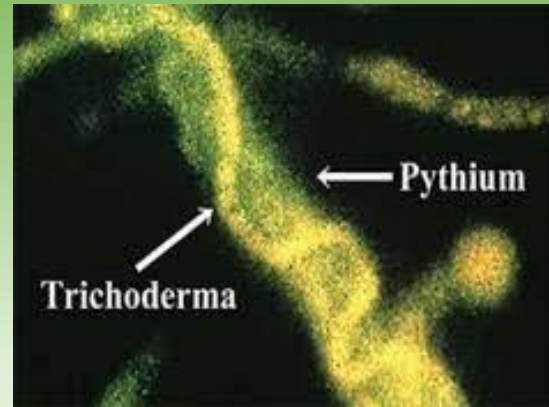
Soil

BEFORE

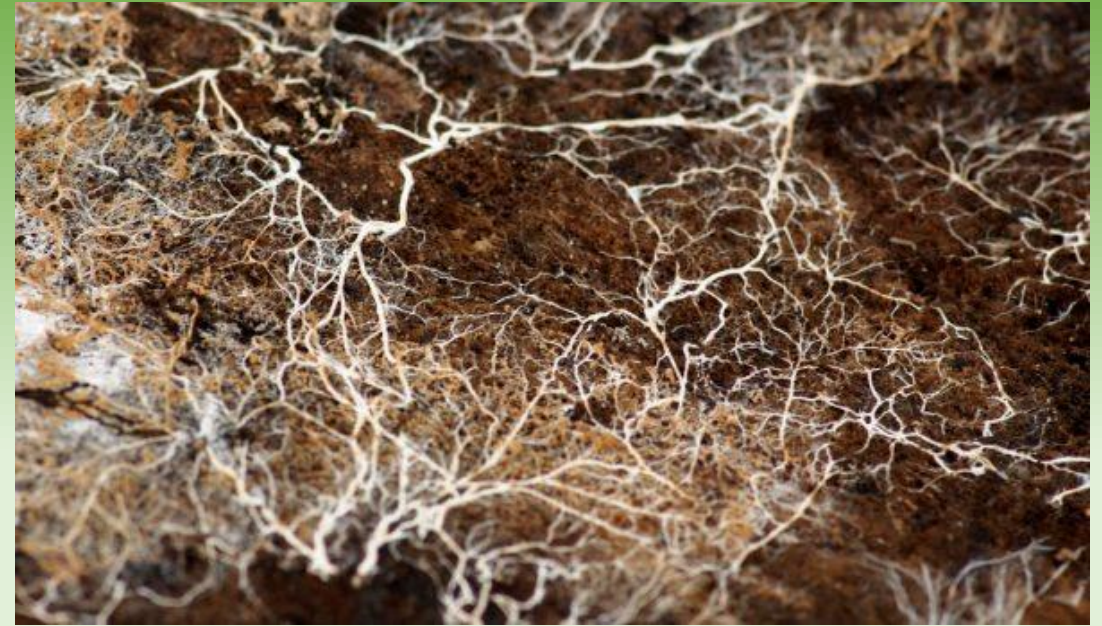
AFTER

A-GrowHumac

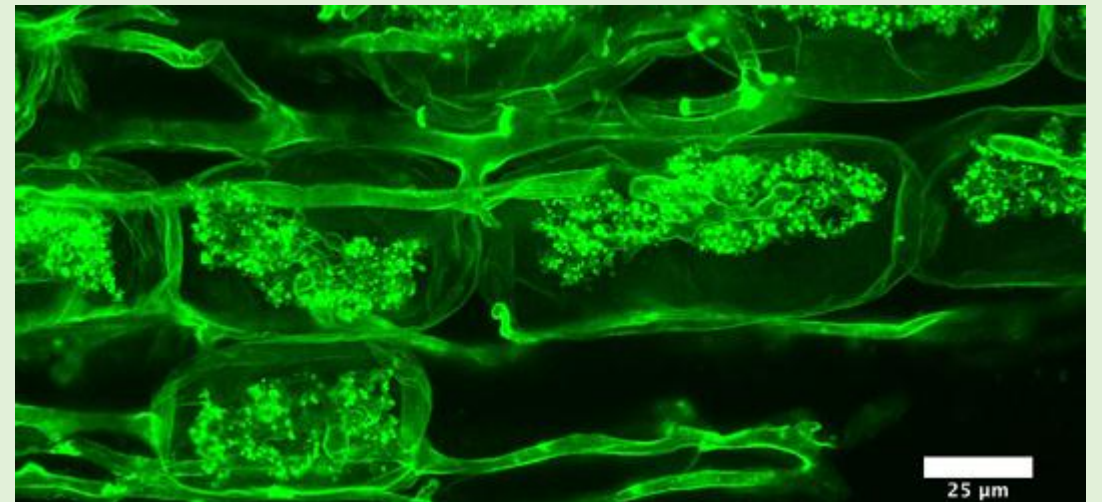
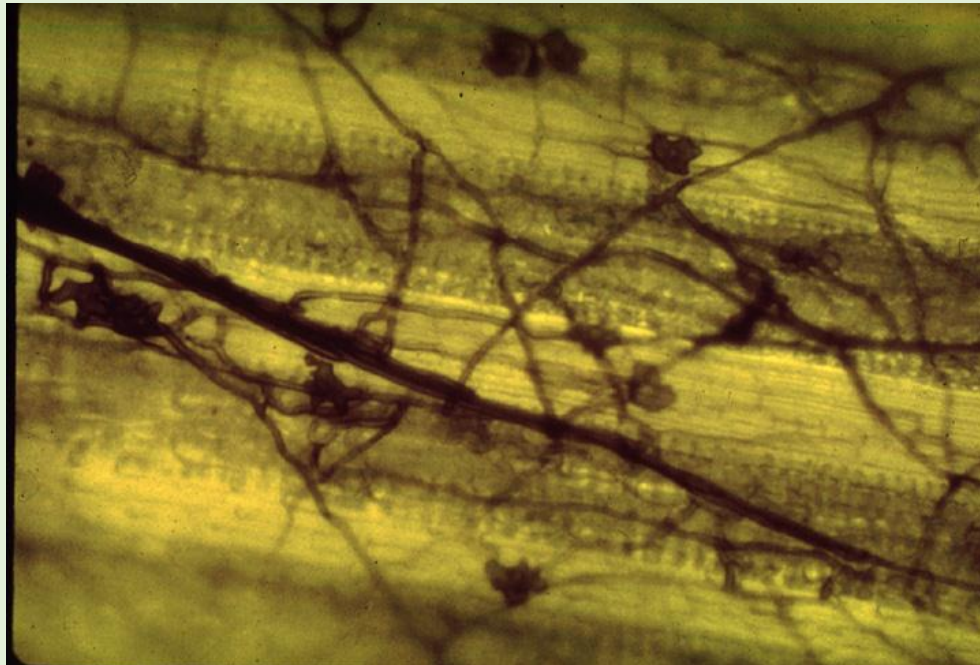
Soil Fungi Examples



Fungi prefer more acidic environments without soil disturbance

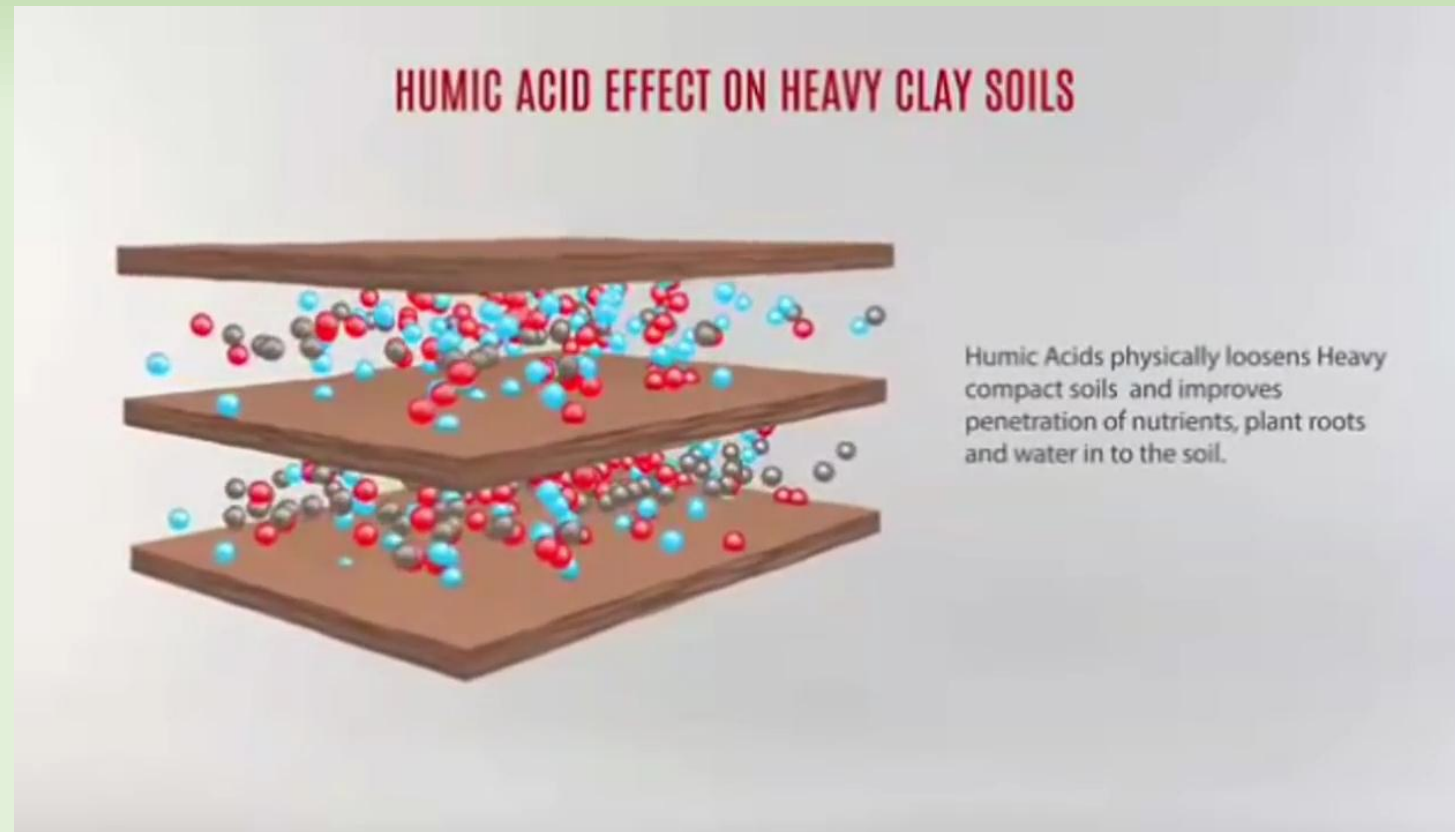
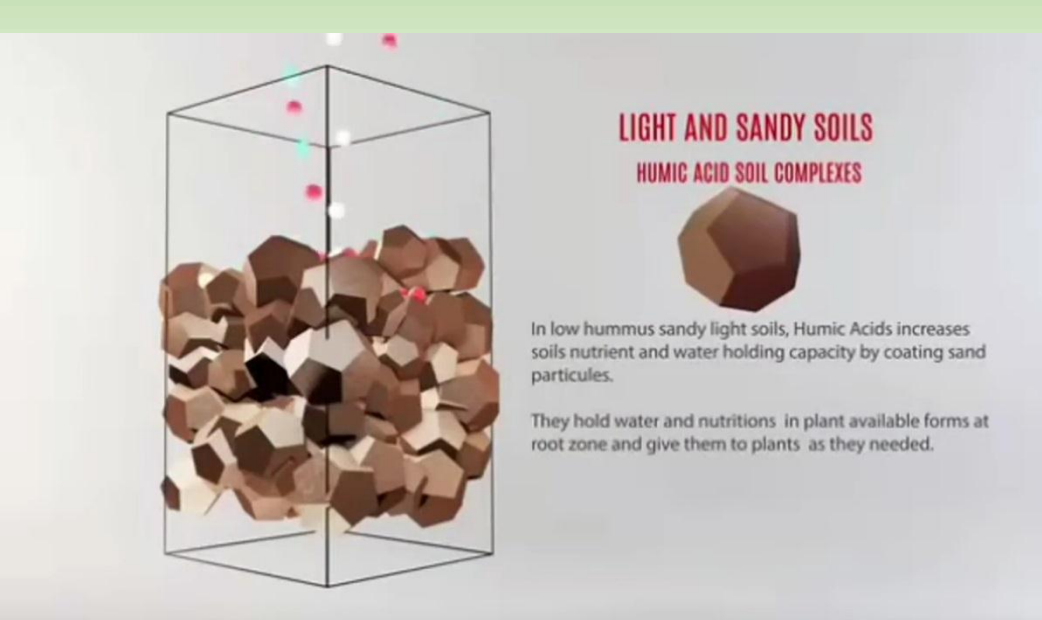


Most fungi do not survive without oxygen

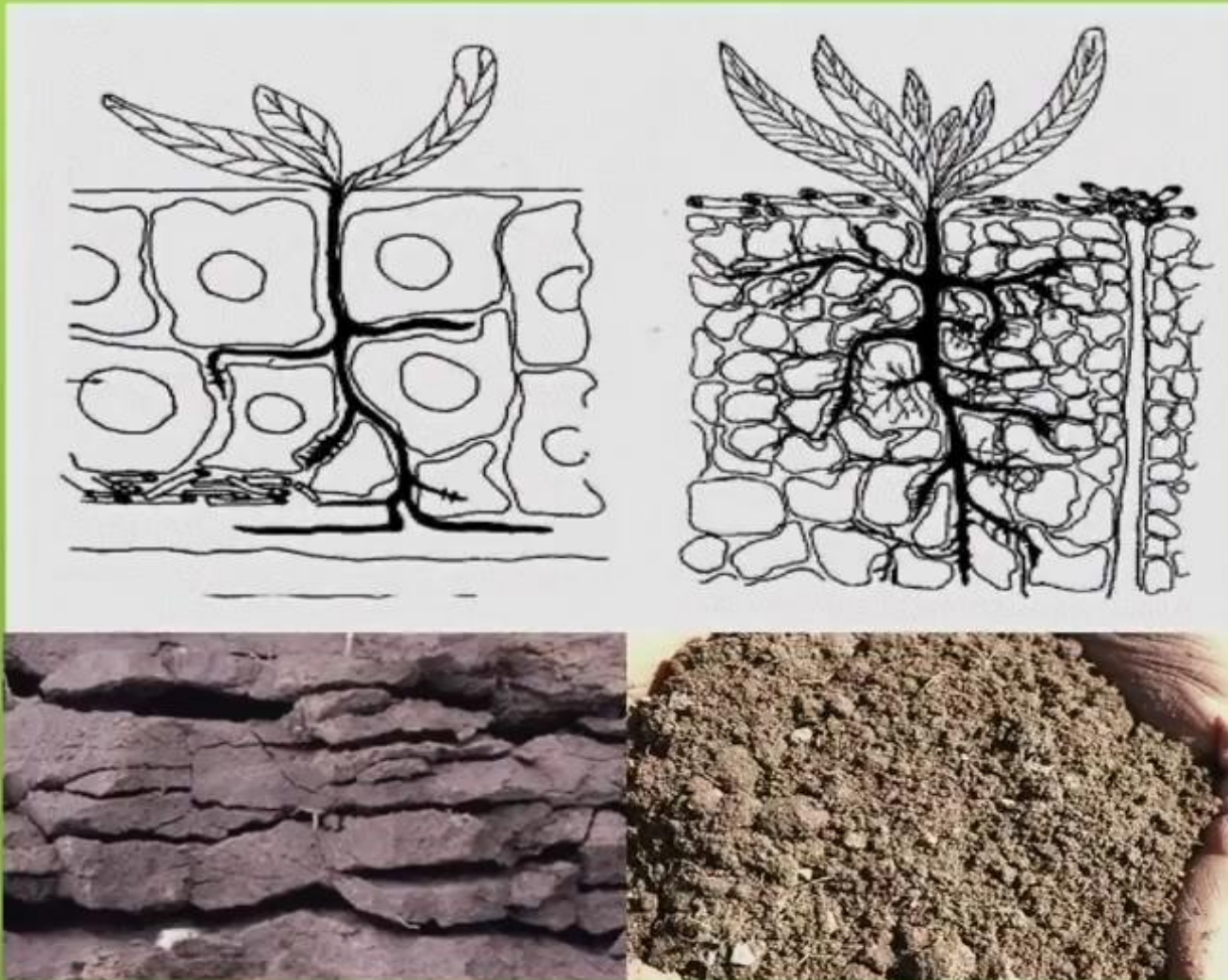


Shrub-like arbuscules in root cells, stained with a fluorescent dye. Scale bar = 25 μm. Credit: Priya Pimprikar

Humic acid has many beneficial effects on soil physical structure, soil pH buffering, increase soil cation exchange capacity(CEC), soil microbial proliferation, root growth, cell permeability, nutrient uptake , water absorption 15 times its weight and increasing yield.



Soil structure determines root depth and architecture and predator/prey relationships. In turn, roots modify the soil structure improving predator/prey relationships and nutrient availability to the plants. Roots can also create nutrient depleted zones very quickly in poorly structured soil.

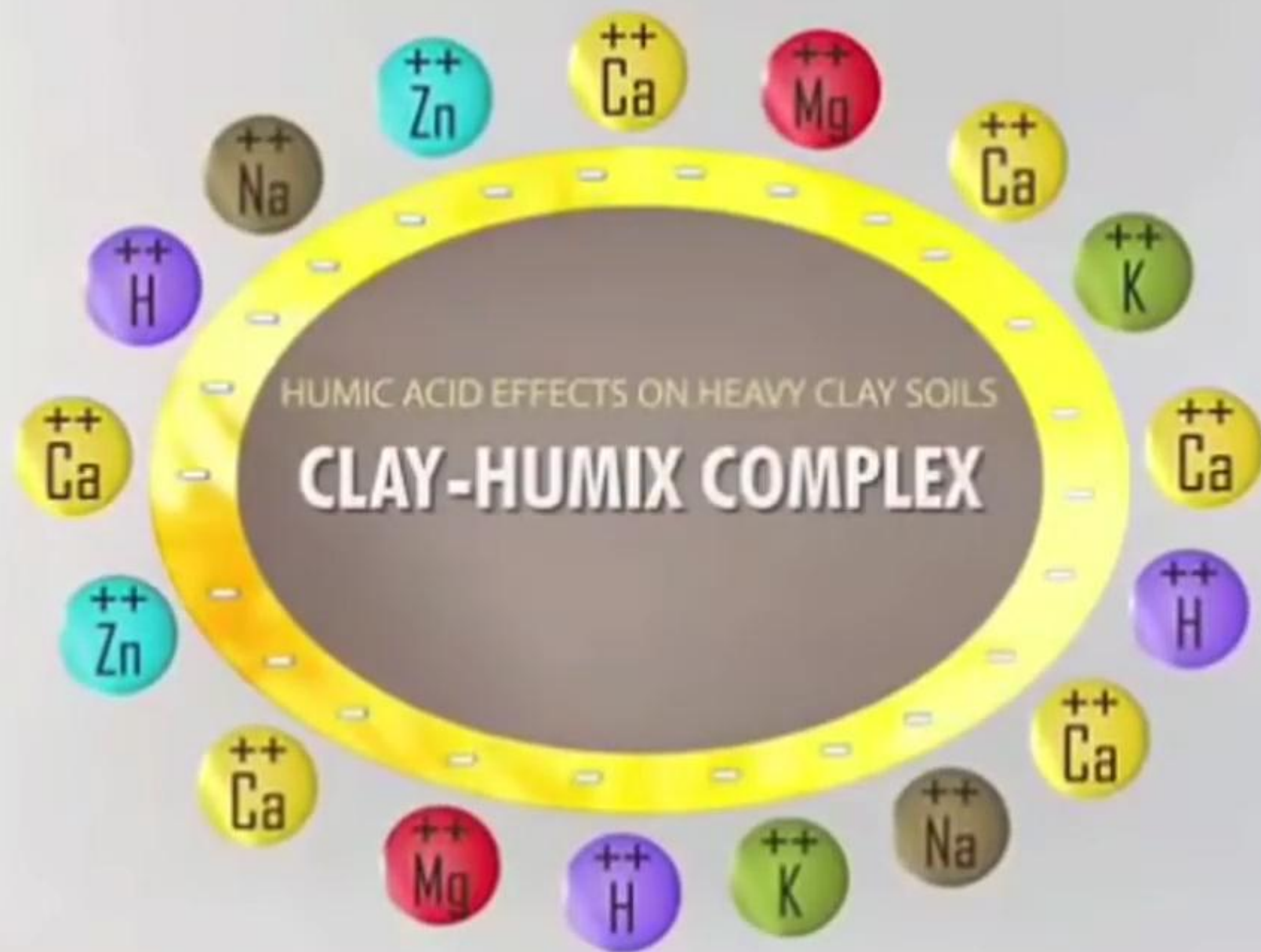


From: Bayerische Landesanstalt für Landwirtschaft (LfL)



SOIL PH AND NUTRIENT ABSORPTION

ACIDIC						NOTRAL		ALKALINE	HIGH ALKALINE					
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Nutrient Deficiencies and Toxications Salinization (Iron, Manganese Boron, Copper, Zinc)						Ideal Ph for Plant Development PH 5,5-7,5			Nutrient Deficiencies and Toxications (Azot, Fosfor, Potasyum, Sülfür, Kalsiyum, Magnesium Nitrogen, Phosphorus, Potassium, Sulphur, Calcium, Magnesium)					



RAIN

Soils Rich in
Humic Acids

NO ₃ ↓	25 cm	NO ₃ ↓
zero	40 cm	NO ₃ ↓
zero	60 cm	NO ₃ ↓
zero	90 cm	NO ₃ ↓

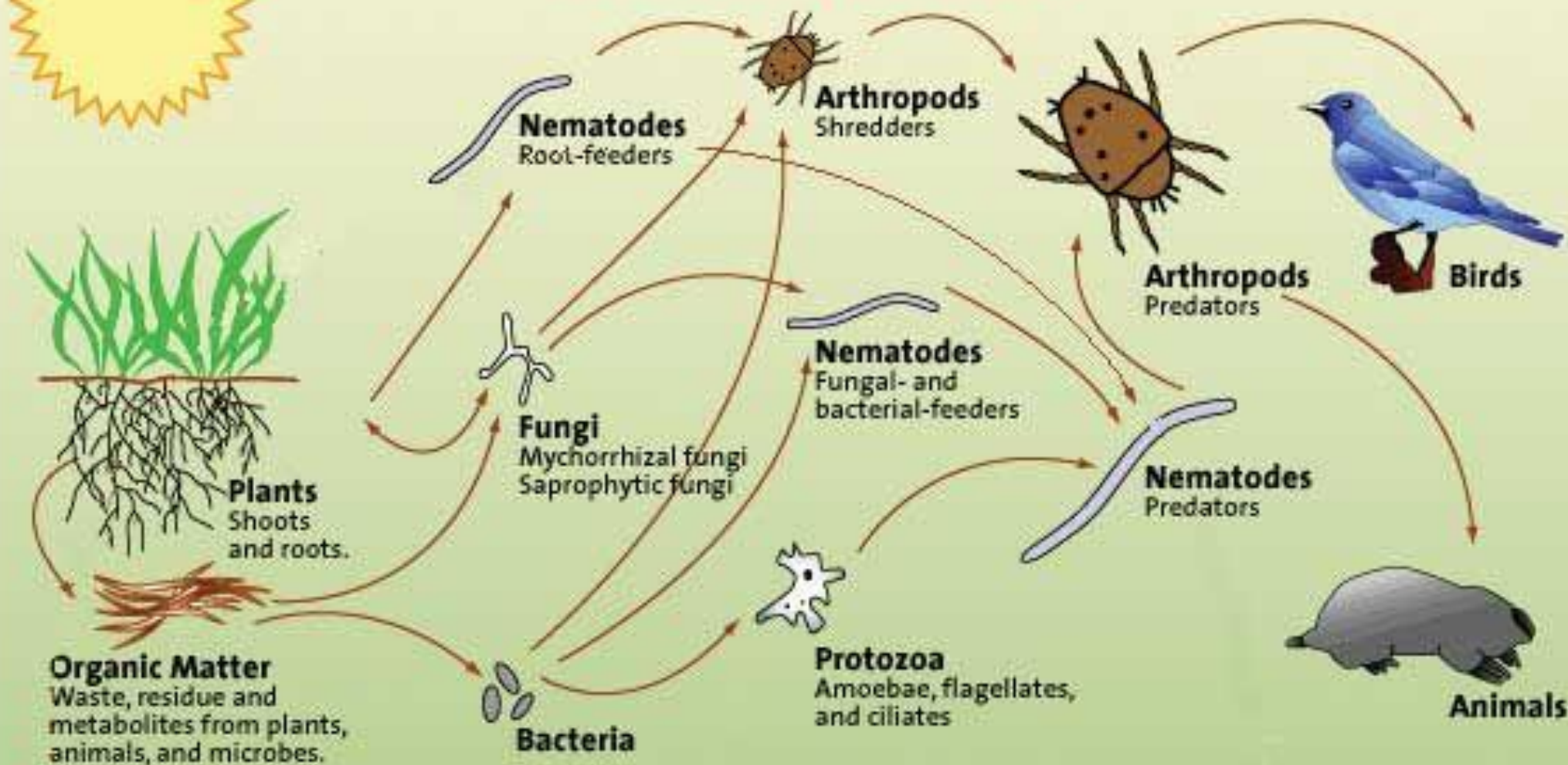
Soils without
Humic Acids

Humic Acid Ecological Benefits

First of all, soils with a high content of humic acids are a guarantee for low nitrate leaching and for optimum nutrient efficiency. A well-developed root system, which is achieved by a high content of humic acids, prevents that nitrate and pesticides mix in with ground water. Furthermore, a low content of nitrate is an indicator and a prerequisite for appropriate organic agriculture. It happens very often that growers use fertilizers more than plants can take up. This leads to nitrate concentration in soil, which is later to be found in ground water. A

Drinking Water

The Soil Food Web



First trophic level:
Photosynthesizers

Second trophic level:
Decomposing Mutualists
Pathogens, Parasites
Root-feeders

Third trophic level:
Shredders
Predators
Grazers

Fourth trophic level:
Higher level predators

Fifth & higher trophic level:
Higher level predators



Predators are responsible for up to 45% of the N mineralisation in well structured soil. Amoebae can engulf bacteria, fungal spores and protozoa in the tiniest soil pore. These effective predators concentrate N in the rhizosphere.

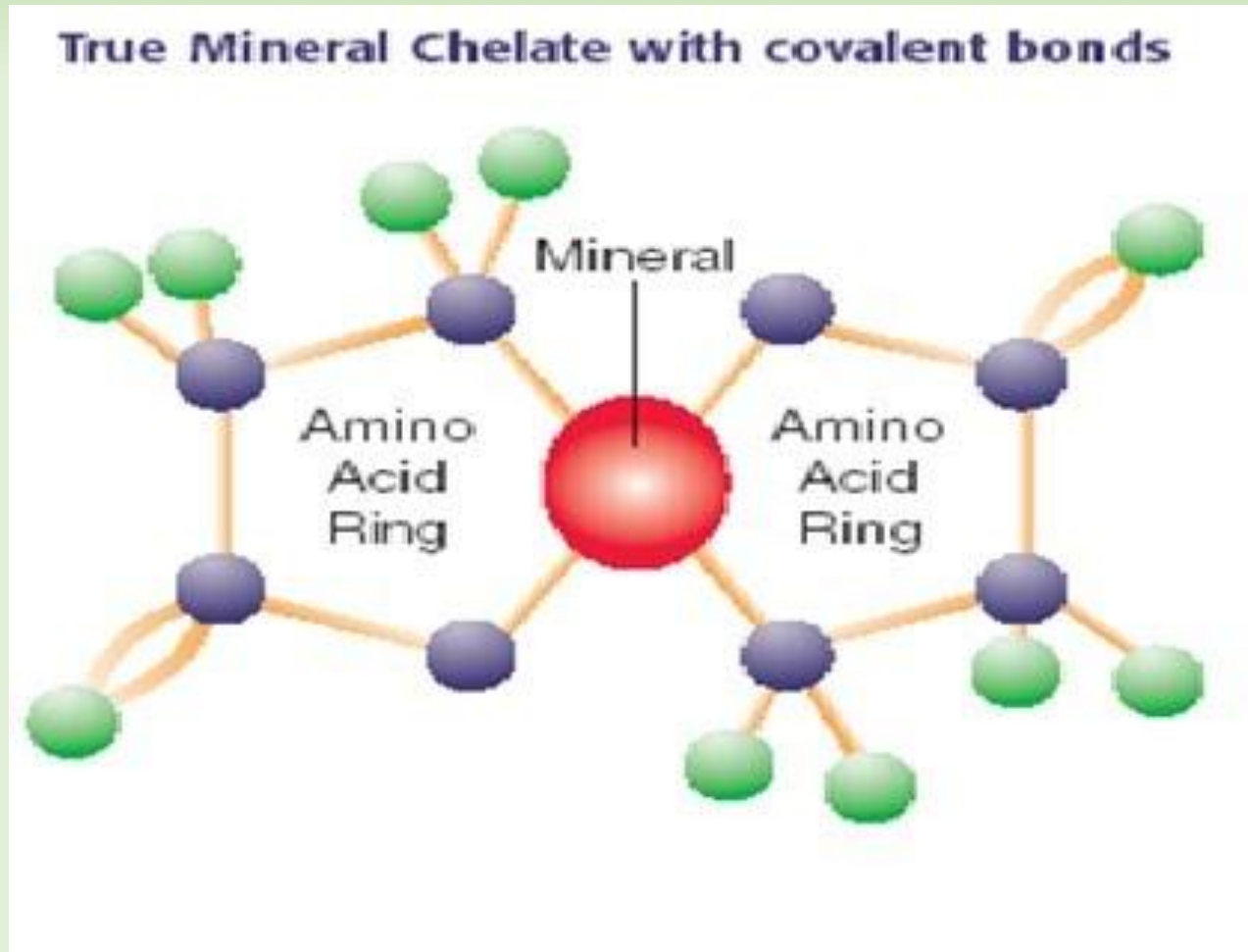


Microarthropods. Soil **micro-arthropods** include small invertebrate animals with a exoskeleton and segmented body



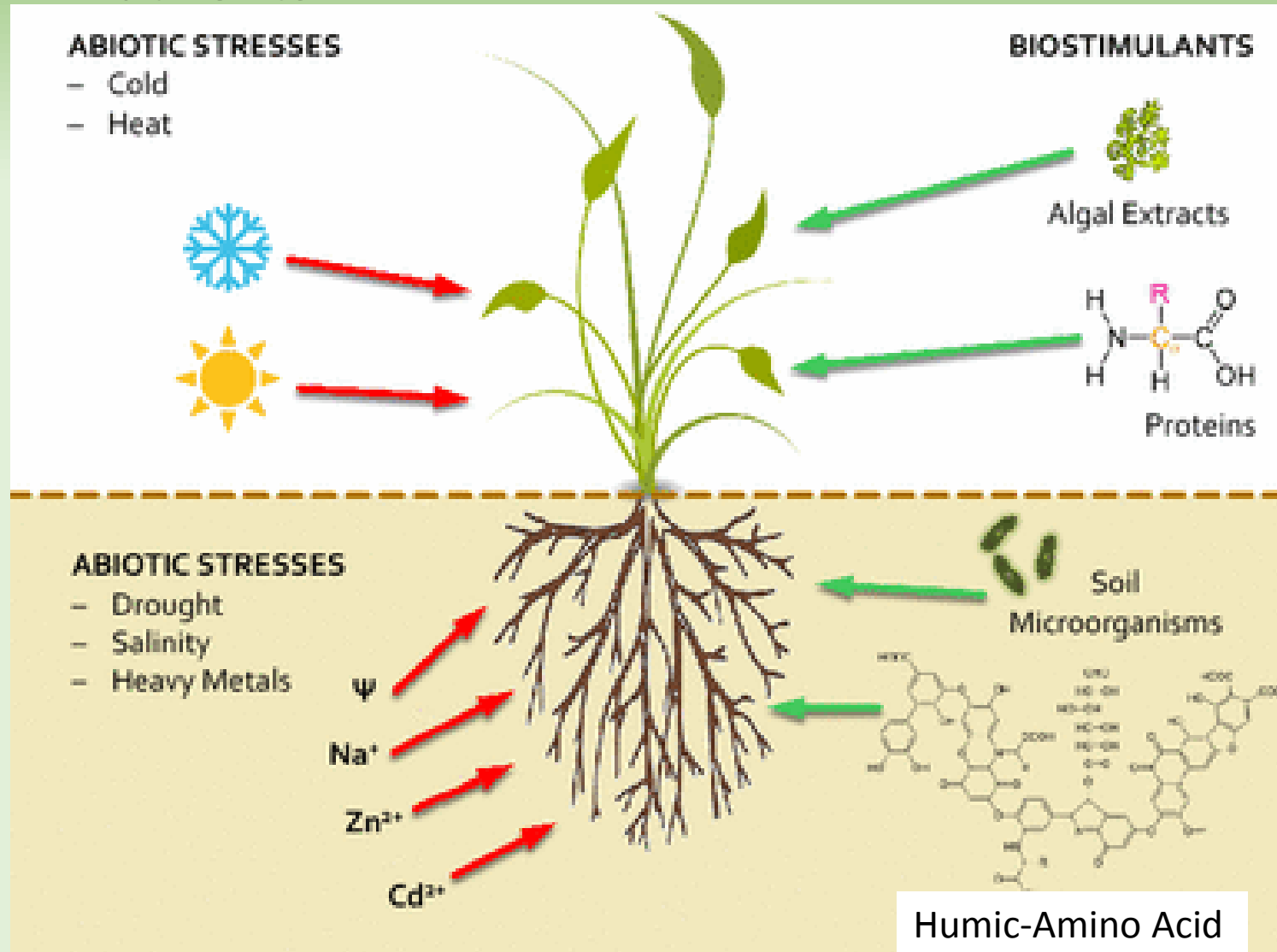
Proteinogenic Amino acids

*acts as a cytoplasm osmotic bio-stimulant
chelating agent which help plants improve
absorption



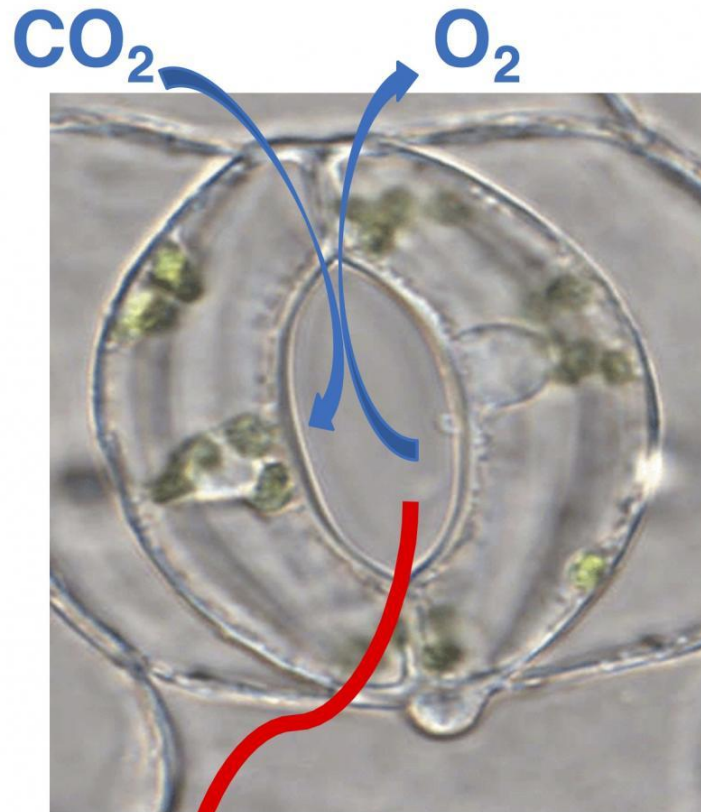
Proteinogenic Amino acids

*translocation of macro and trace nutrients



Proteinogenic Amino acids

*aid in opening of stomatas



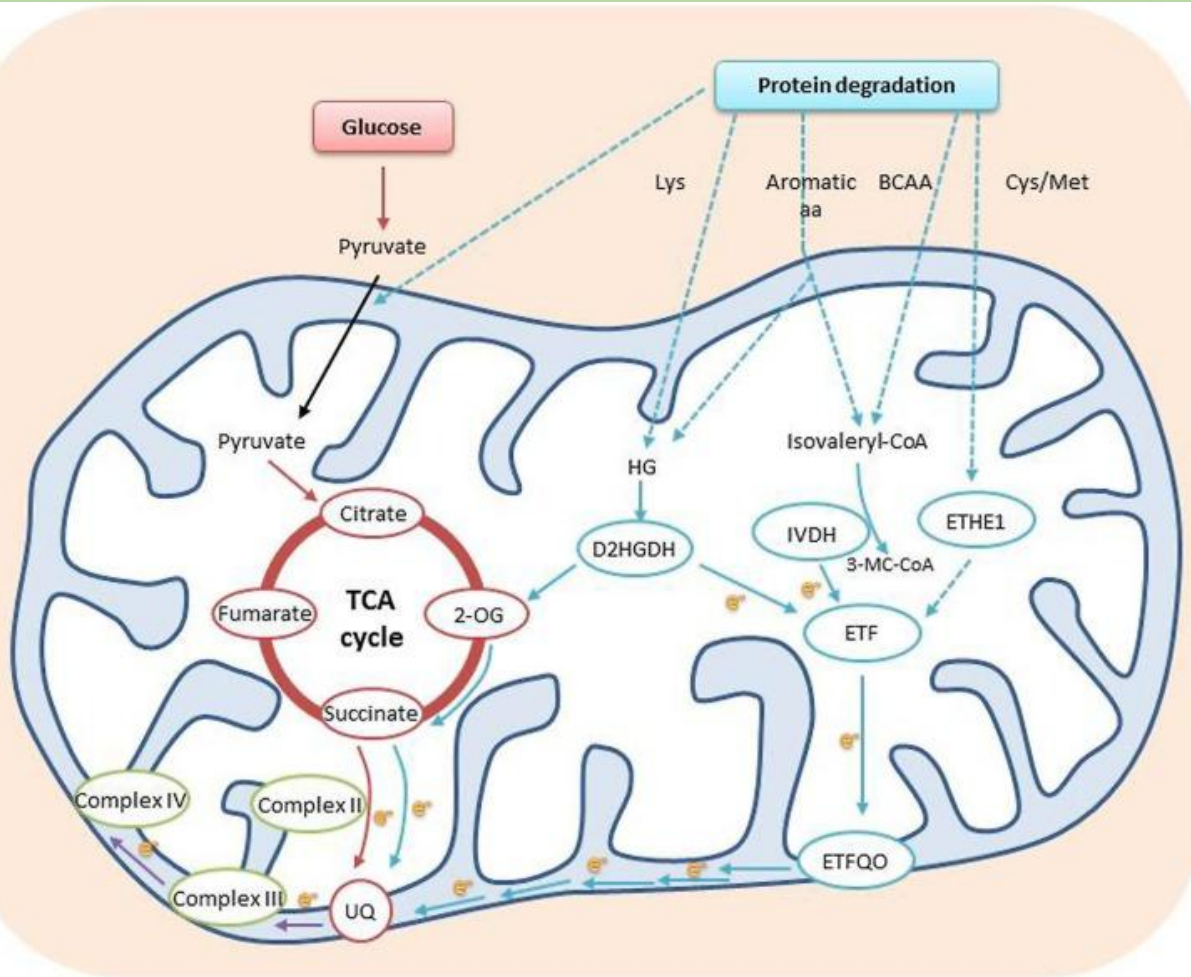
$\geq 95\% \text{ H}_2\text{O}$



Open (left) and closed (right) stomata found on the surface of plants' leaves, stems and other organs. Through the stomata, plants exchange oxygen and carbon dioxide, and lose more than 95 percent of their water as well. Therefore, correct regulation of stomata closure is important to adapt to drought conditions

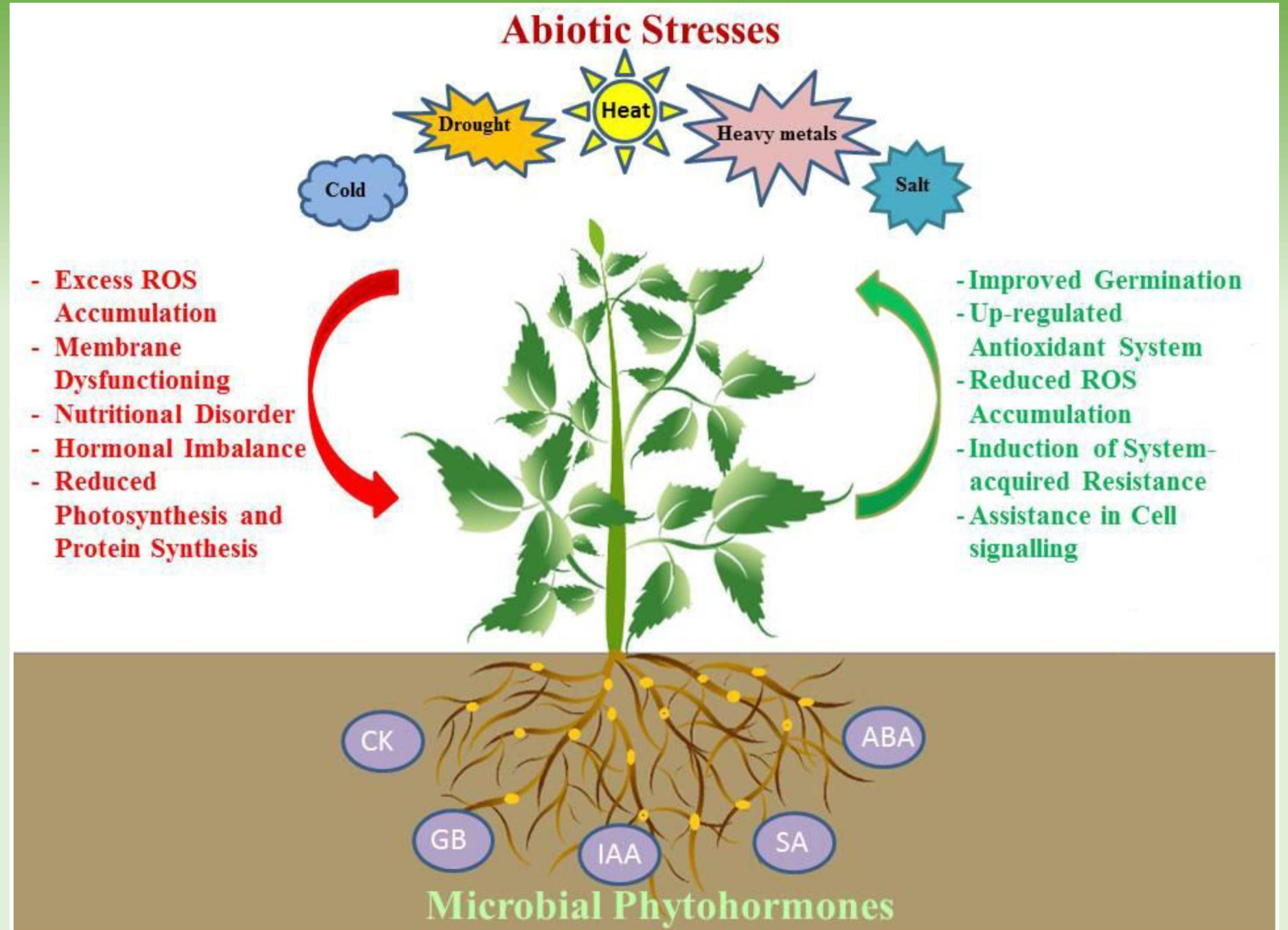
Proteinogenic Amino acids

*increase photosynthesis chlorophyll concentration which makes crops lush and this result in good plant growth,



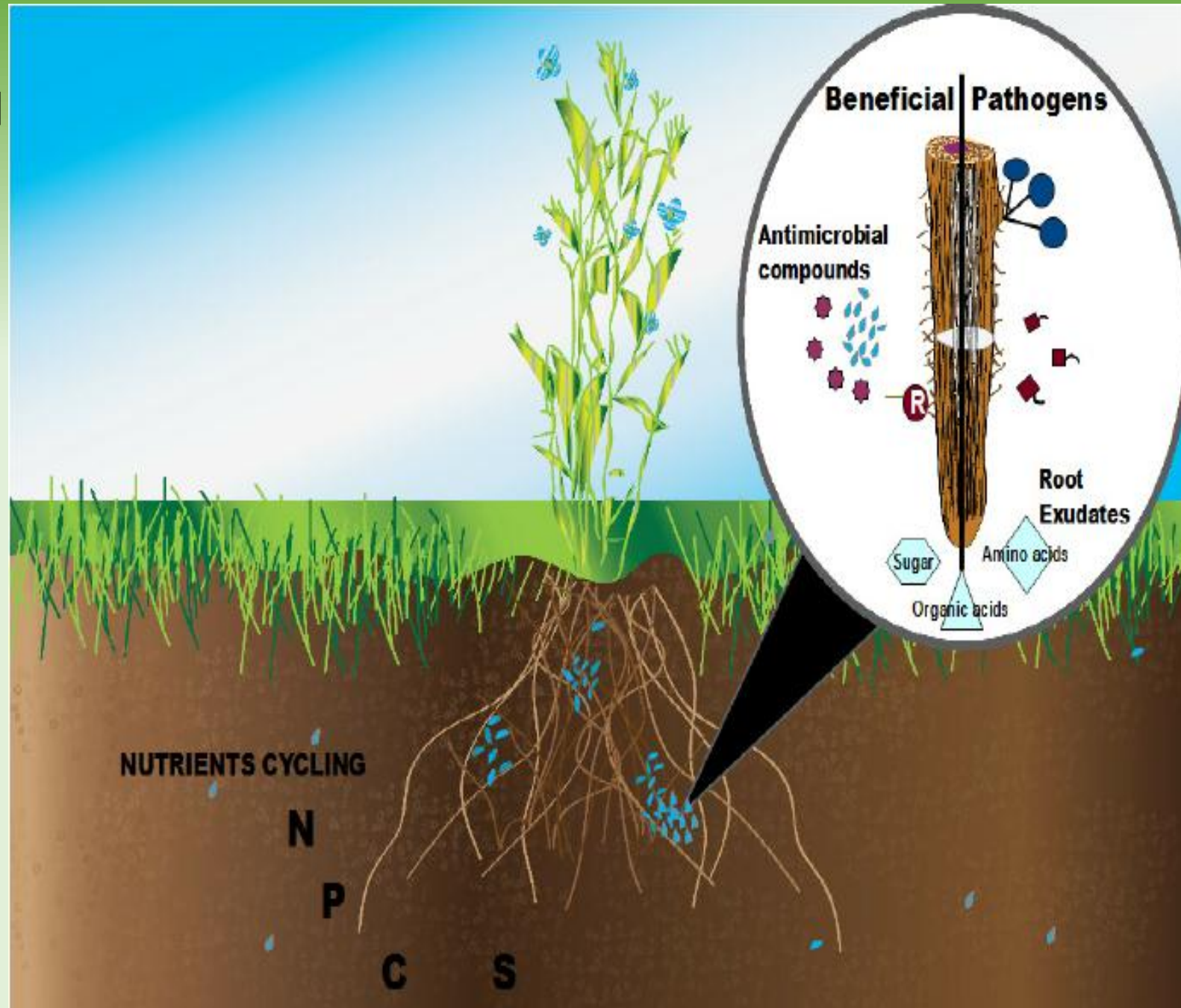
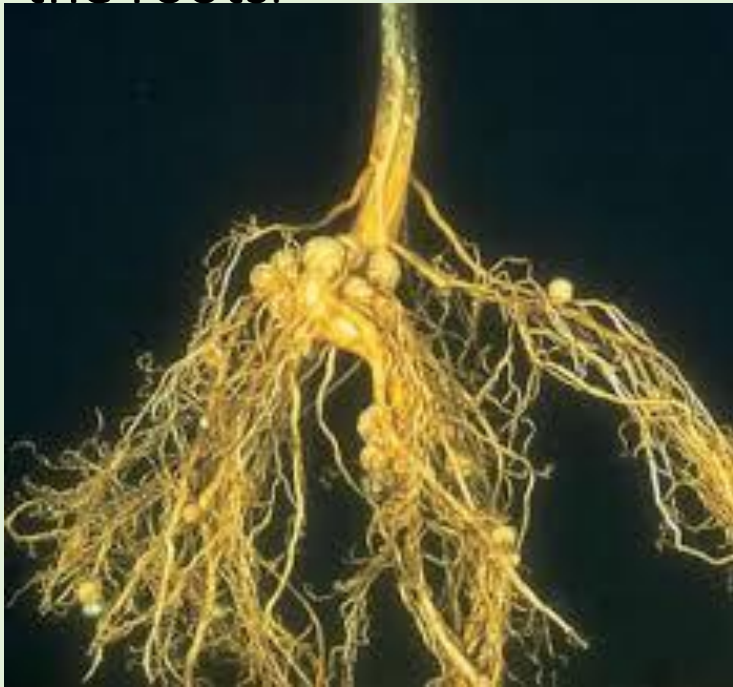
Amino acids can be used as electron donors to the mitochondrial electron transport chain

**Proteinogenic
Amino acids**
*increase yield
and reduces
abiotic stresses.



Proteinogenic Amino acids

*It also acts as equilibrium of soil microbial flora to improve mineralization of the organic matter and formation of a good soil structure and fertility around the roots.



Fertilizer Diet



N, P, K

micro-
nutrients

good
microbe
metab's

Soil Health Diet

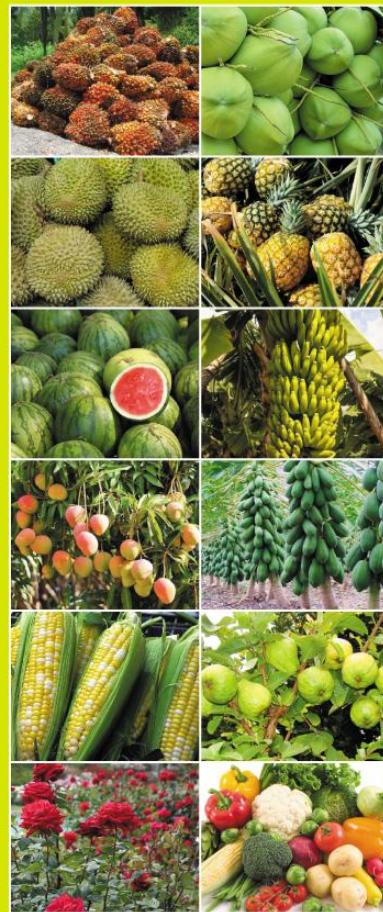


AGrowHumac is very good for
crops and plants like:

- Oil Palm
- Coconuts
- Durians
- Pineapples
- Water Melons
- Mangoes
- Bananas
- Papayas
- Soursop
- Guavas
- Logans
- Rambutans
- Corn
- Fruit & Leafy Vegetables
- Horticultures
- Paddy
- Fish Pond Embankment

The logo for A-GrowHumac is a red rounded rectangle with a white border. Inside, the text "A-GrowHumac" is written in a bold, yellow, sans-serif font. The "A" is slightly larger and more prominent than the other letters.

A-GrowHumac



A-GrowHumac

Living Soil

Organic Soil Amendment and Plant Bio-Stimulant



A-GrowHumac contains Humic Acid and Proteinogenic Amino Acids(22 types)

Humic acid has many beneficial effects on soil physical structure, soil pH buffering, increase soil cation exchange capacity(CEC), soil microbial proliferation, root growth, cell permeability, nutrient uptake , water absorption 15 times its weight and increasing yield.

Proteinogenic Amino acids acts as a cytoplasm osmotic bio-stimulant chelating agent which help plants improve absorption, translocation of macro and trace nutrients; aid in opening of stomatas, increase photosynthesis chlorophyll concentration which makes crops lush and this result in good plant growth, yield and reduces biotic stresses. It also acts as equilibrium of soil microbial flora to improve mineralization of the organic matter and formation of a good soil structure and fertility around the roots.

Nutrient Contents

Humic Acid 20% + Proteinogenic Amino Acid 20% + NPK solubles

Very Good for:

Oil Plams, Coconuts, Durians, Pineapples, Water Melons, Mangoes, Bananas, Papayas, Soursop, Guavas, Logans, Rambutans, Corn, Fruit Vegetables, Leafy Vegetables, Horticultures, Paddy, Fish Pond Embankment

DIRECTION OF USE

50ml~100ml A-GrowHumac + 15~30ml MPC / 20 Litre water

TOP SOIL DRENCHING TIMING

Water early in the morning before sunrise or late in the evening after 4.30pm

COMPATIBILITY

Generally compatible with most fungicide and pesticide

STORAGE

Store in cool dry place away from direct sunlight

LANGKAH-LANGKAH PENYEDIAAN

Campur 50ml~100ml A-GrowHumac + 15~30ml MPC / 20 Litre air

MASA PENYEMBURAN KE PANGKAL POKOK

Masa yang sesuai untuk menyembur adalah waktu pagi sebelum matahari terbit ataupun lewat petang selepas pukul 4.30 petang.

KESERASIAN

Umumnya serasi dengan kebanyakan racun serangga dan racun kulat.

STORAN

Simpan di tempat kering, dingin dan jauh dari matahari.

A-GrowHumac

MPC



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Thank You
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