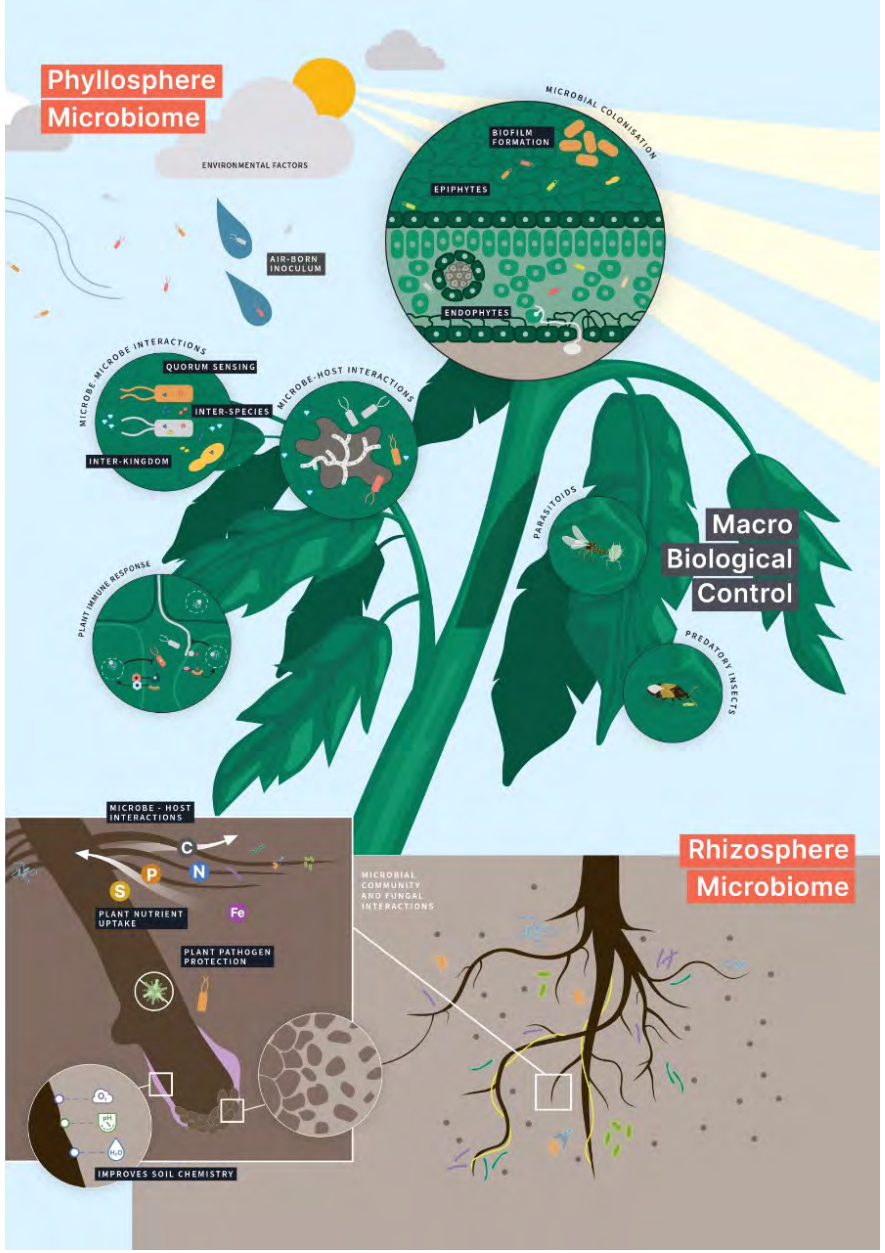
An Introduction to Holistic Growing



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What is Holistic Growing

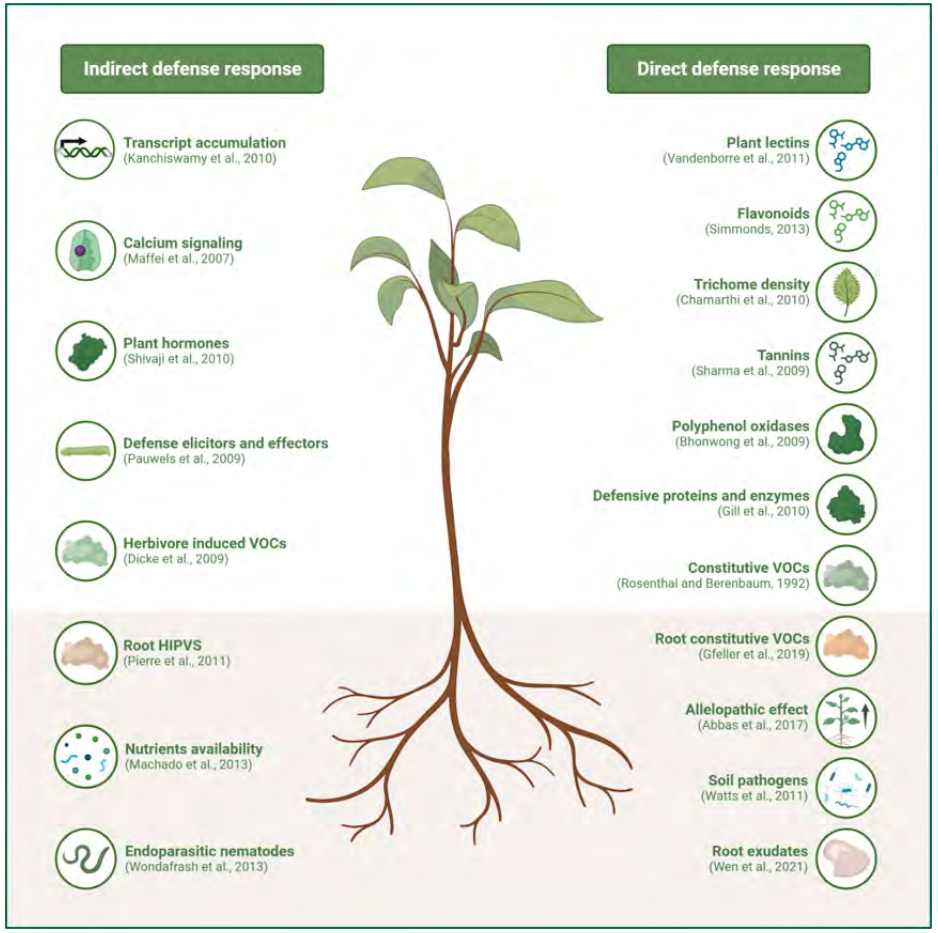
- At Fargro our approach to agronomy is called ‘Holistic Growing’
- We aim to understand the interactions between each plant part and their associated organisms to help us understand the behaviour of the whole system
- From this, we’re able to ***harness*** and ***enhance*** natural plant processes to grow strong and healthy crops

Why are wild plants so healthy?

- In the natural world it is very rare to see plants riddled with disease or covered in pests.
- This is because plants are very strong and robust organisms.

How do plants defend for themselves?

- Plants can't move so they must adapt or die to every threat they encounter – both environmental and biological
- They have a huge number of mechanisms to protect from these threats



Why aren’t crops healthy then?

- This is due to our style of crop production
- We provide the plant with the tools to grow big and fast but not the tools to protect itself
- So, if applied protections fail the plant is extremely vulnerable

How do we keep crops healthy?

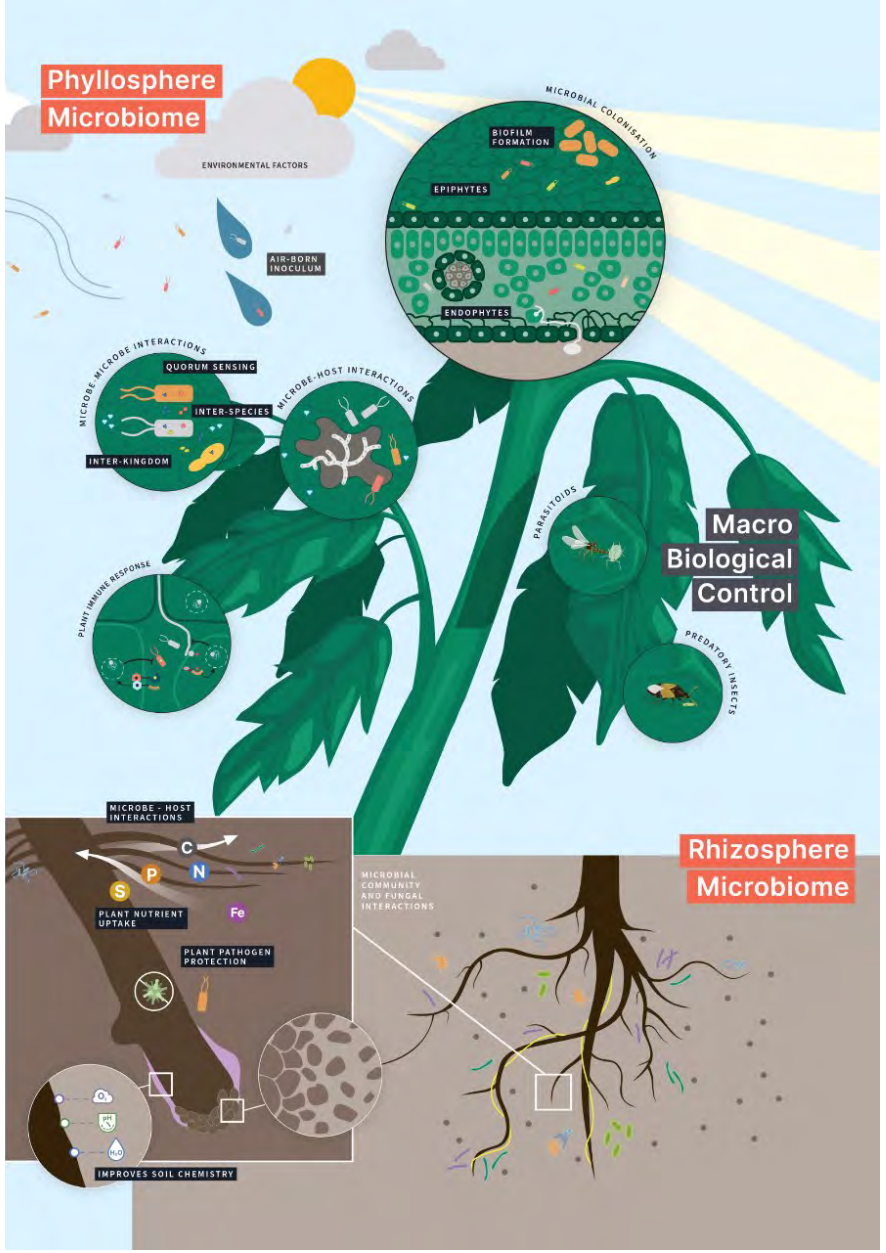
- Intense fertilisation negatively impacts plant defensive processes so chemical pesticides are required.
- These pesticides act like anti-biotics and can put the plant on ‘life support’ – making it reliant on them for protection.

If it works, then why not continue?

- This system is damaging to the environment and can have negative human health effects.
- It's also **expensive** as inputs are used to solve problems from overuse of other inputs.

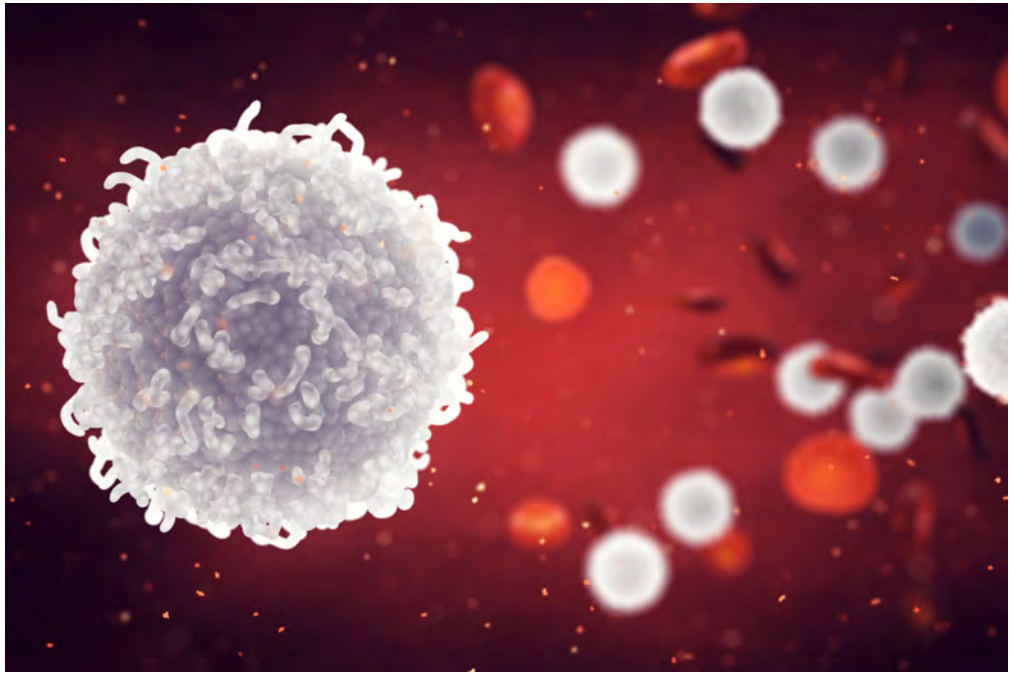
What is the solution?

- We need to shift our understanding of plant biology to a **holistic** one.
- We can arm the plant with the ability to utilise all its protective functions.
- We maximise the biological capacity of the plant – reducing need for expensive and damaging chemicals.



Holistic understanding of the human body

- This parallels our understanding of the human body.
- We *also* have many important systems for protecting ourselves.
- A healthy lifestyle will boost the ability of the body to use these systems.



The gut microbiome

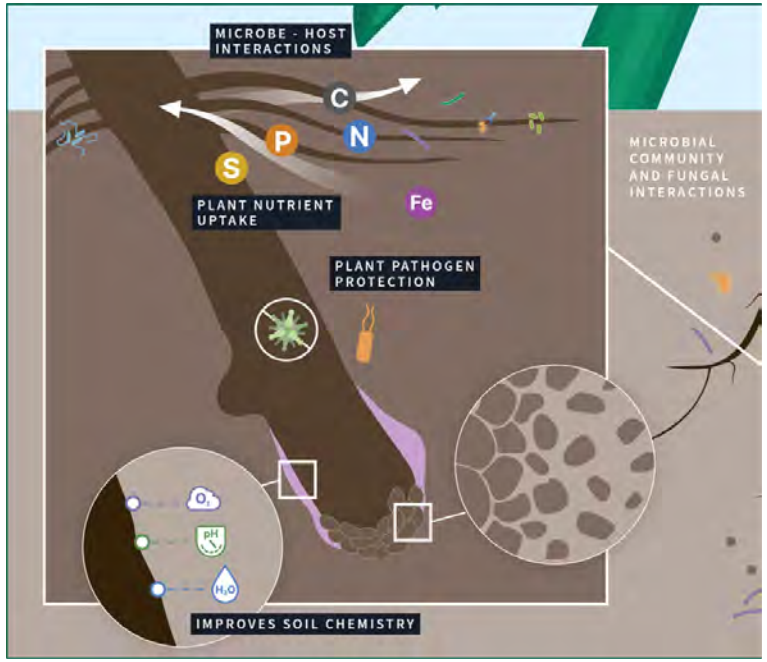
- The Gut Microbiome a perfect example.
- The systems may be localised but controls, directly or indirectly, lots of mechanisms around the whole body – and vice-versa.
- Beyond digestion, it regulates a wide range of systems – from the immune response to mood control.

Gut and dietary requirements

- It was assumed we required a certain amount of each nutrient – regardless of origin.
- However, we now know that the **form** these nutrients come in is vital for feeding the gut microbiome.
- Feeding the microbiome provides correct human nutrition, but also has wide ranging health effects.

How does this apply to plants?

- In a natural system, a complex and diverse community of microbes exists around the roots.
- This community operates similarly to the gut microbiome with benefits outside of nutrition.

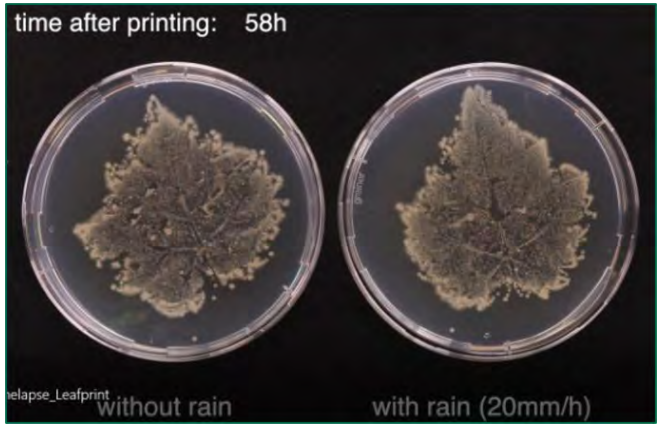


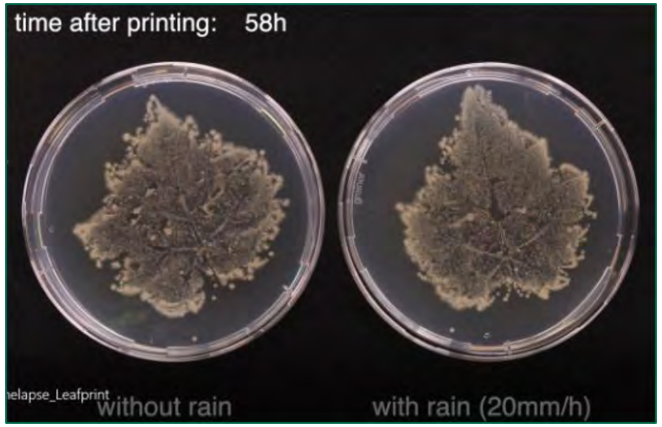
The Rootzone microbiome

- The form that nutrients are applied is vital for feeding the microbes.
- Artificial nutrients bypass the microbes – starving them and impacting plant health.

Holistic crop protection

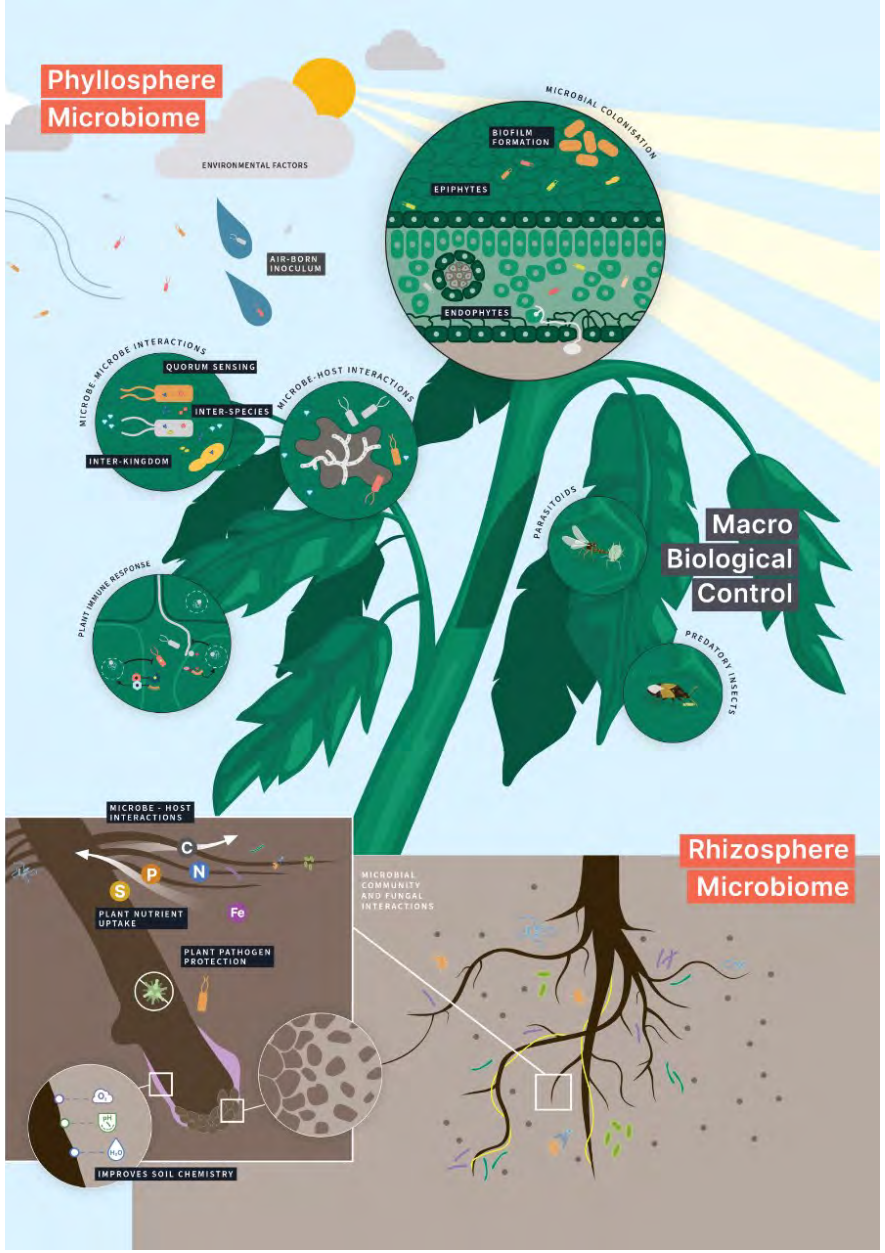
- We can select products that work ***with*** the plant and one another.
- These products rely on natural systems.
- **The correctly fed plant will provide a stronger response and higher efficacy**.





Benefits of bio-based solutions

- These products are friendly to the environment and safe for human health.
- They are often lower cost and supportive of general crop health – reducing inputs and boosting yield.

Holistic Growing

- We emulate a natural system to give the plant the tools required to be as resilient and productive as possible.
- This reduces the requirement for environmentally damaging inputs.
- In doing so, we choose products that complement one another to keep costs down.