

### Mineral Holding Capacity

- Plant cells have a finite mineral holding capacity.
- In soils we call it cation exchange capacity or anion exchange capacity.
- When one cation or anion is excessive another will be displaced to make room for it.

### Synergistic Interactions

- There is a synergistic relationship between the minerals in opposing quarters.
- Cation macronutrients have a synergistic relationship with anion micronutrients (Ca/Si-B).
- Anion macronutrients have a synergistic relationship with cation micronutrients (P/Zn-Mn).

### Nutrient Mobility

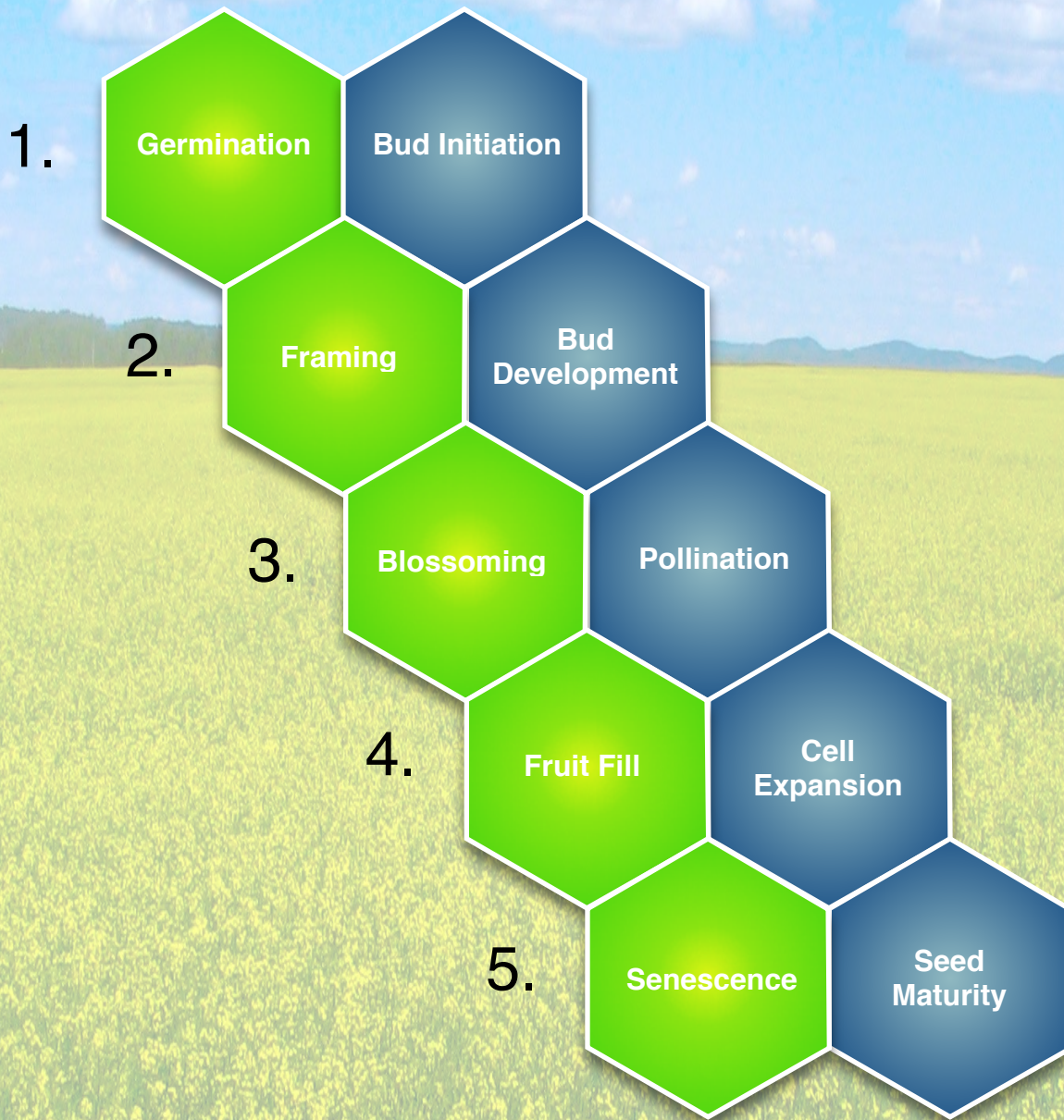
- All macronutrients except calcium are mobile in plants.
- Plants attempt to maintain ideal levels in new growth.
- Comparing old and new leaves can show nutrient movement and early imbalances.

### Cation / Anion Balance

- There is a strong correlation between anion / cation balance and plant immunity.
- Anion and cation balance is regulated by calcium and phosphorus, the heaviest macronutrient cation and anion respectively.



# Critical Points of Influence



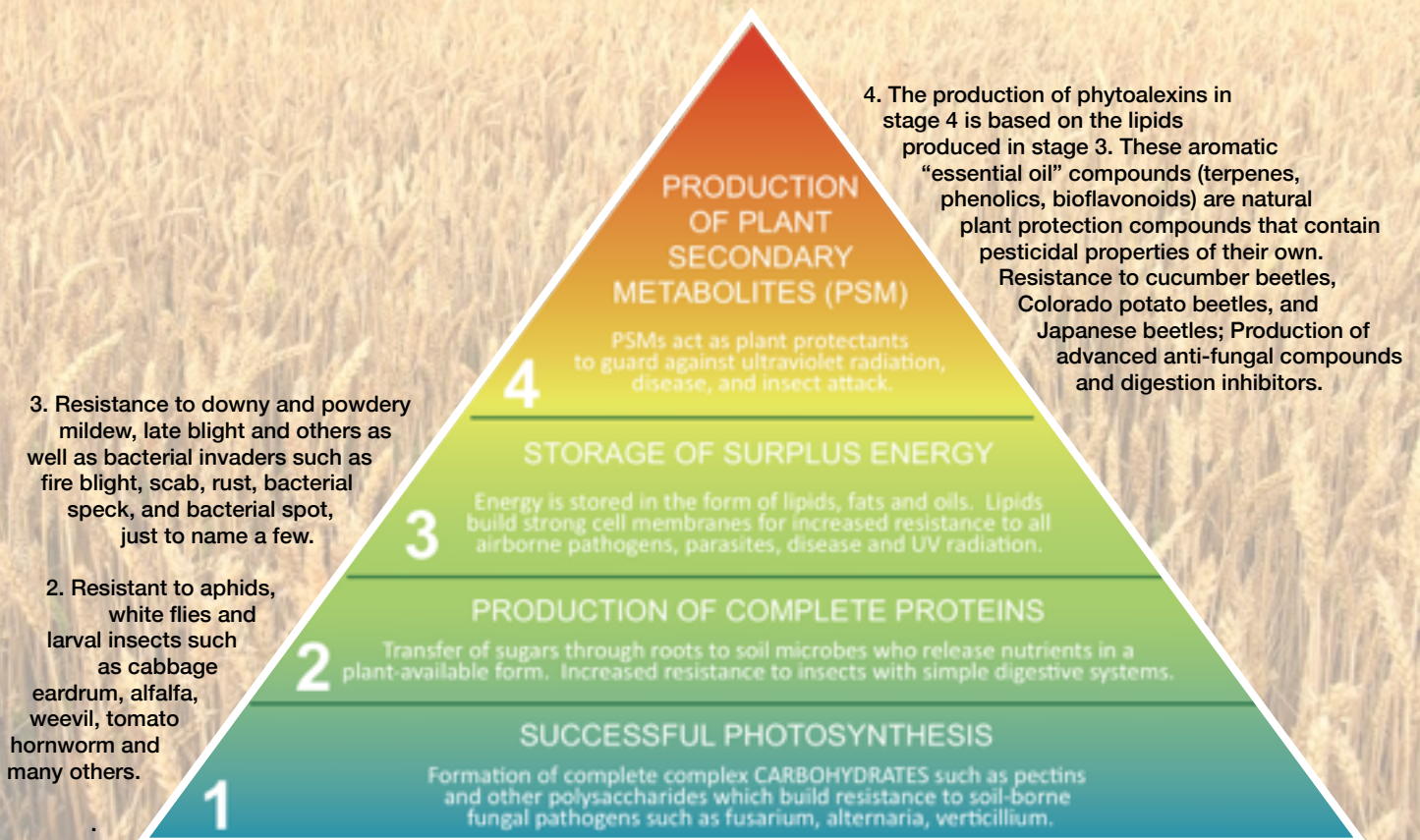
For many crops there are five distinct Critical Points of Influence, which are connected with both vegetative and reproductive growth stages.



Advancing Eco Agriculture

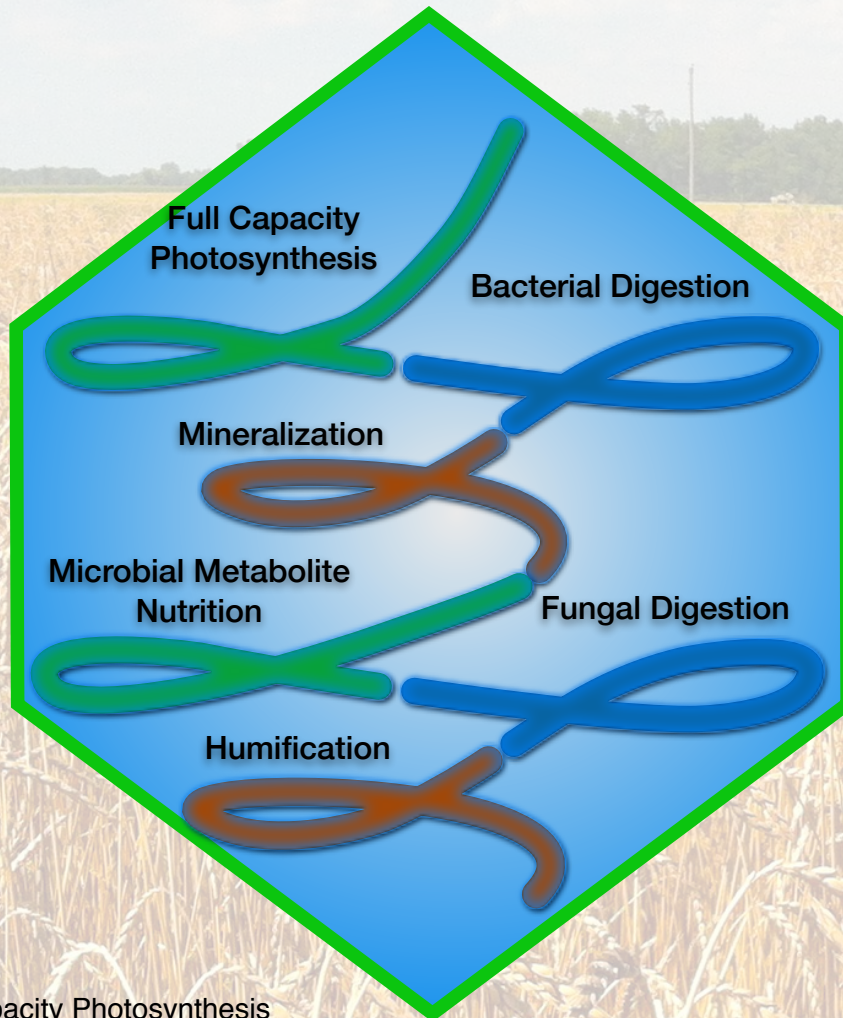
## Plant Health Pyramid

We work with different crops on many farms around the world, helping them to achieve functional immunity and higher levels of disease and insect resistance. We have noticed a clear and gradual evolution of plant health as plants become resistant to different pests at different stages of metabolic functionality and nutritional integrity.



If we wish to grow “food as medicine,” this is where the medicine is.

# Biological Cascade



1. Full Capacity Photosynthesis  
Most crops can produce as much as 3-5 times more photosynthetic energy than 'normal'
2. Sugars Are Released as Root Exudates  
Bacterial populations develop rapidly to utilize these sugars
3. As Bacterial Populations Develop  
They extract minerals from the soil mineral matrix to build their own cells
4. Plants Absorb Microbial Metabolites  
And become exceptionally energy efficient, resulting in the development of elevated lipid levels
5. Lipid Root Exudates  
Are digested by soil fungal communities, which begin expanding rapidly
6. Fungal Digestion of Lipids  
Results in the formation of stable humic substances, with a half life of hundreds of years

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