Advancing Eco Agriculture

Plant Health Pyramid

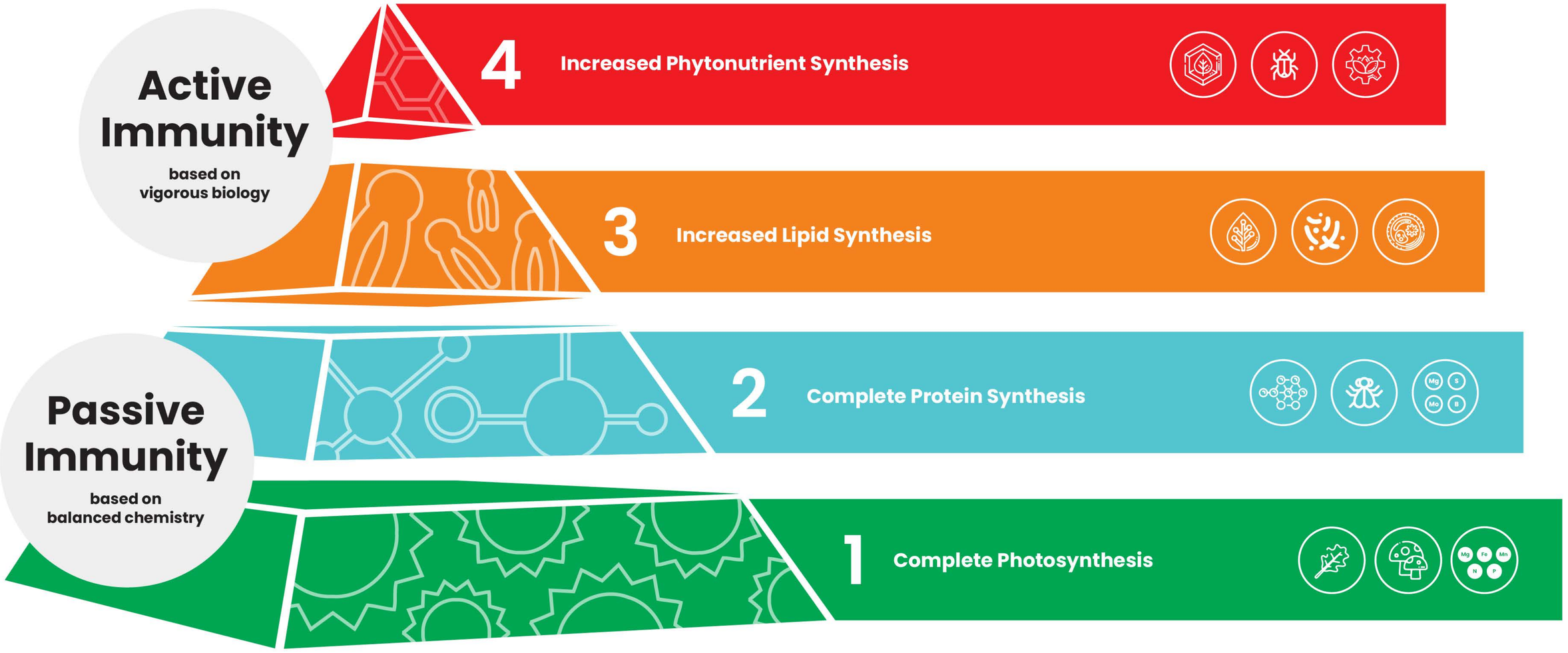
"Healthy plants can become completely resistant to diseases and insects." -John Kempf

Active Immunity

based on vigorous biology

Passive Immunity

based on balanced chemistry



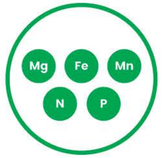
See back to learn what each icon means

Passive Immunity – based on balanced chemistry

1 Complete Photosynthesis

Photosynthetic efficiency increases substantially, shifting the carbohydrate profile to more complex carbohydrates and fewer non-reducing sugars.

Plants develop resistance to soil-borne fungal pathogens, like pythium, rhizoctonia, phytophthora and fusarium.

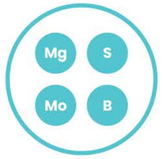


A balance of magnesium, iron, manganese, nitrogen, and phosphorus is essential for maximum photosynthesis.

2 Complete Protein Synthesis

Soluble nitrogen compounds are converted to amino acids and complete proteins in every 24-hour photo cycle — no excess nitrates or ammonium remain in plant sap.

Plants become resistant to insects with simple digestive systems, especially larval and sucking insects such as aphids, leafhoppers, white flies, thrips, tomato hornworms, cabbage loopers, corn borers, and ear-worms.



Adequate levels of magnesium, sulfur, molybdenum, and boron are key to complete protein synthesis.

Active Immunity – based on vigorous biology

3 Increased Lipid Synthesis

Nutrients absorbed in the form of microbial metabolites require less energy for cellular conversion. The extra energy is stored as plant lipids, like waxes and oils, shielding the leaf surface from pectolytic enzymes released when pathogens land on the leaf surface. The extra energy can also be used in times of energy crisis.

Plant develops increased resistance to airborne fungal and bacterial pathogens on the leaf like downy and powdery mildews, late blight, fire blight, rust, bacterial speck, and bacterial spot.

An active and functioning symbiotic relationship between plant and the (soil) microbiome in the rhyzosphere is crucial to provide plants nutrition in the form of microbial metabolites to reach this stage of health.

4 Increased Phytonutrient Synthesis

Plant immune pathways (SAR and ISR) are prompted and enhanced by the plant's microbiome, resulting in increased concentrations of immune compounds and increased phytonutrient synthesis.

Plants develop increased resistance to the entire beetle family, stink bugs, squash bugs, root knot nematodes, and even viruses.

Plants require diverse and abundant microbiome relationships to trigger immune responses to reach this stage of health. Any nutrient imbalances and deficiencies quickly limit a plant's ability to reach this level.