

# VITAGRI

*Growing Health · From Soil to Human Nutrition*

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## WHITE PAPER — REFERENCES & GLOSSARY

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*A complete reference compendium for the Vitagri White Paper*

February 2026

### About This Document

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This document provides the complete references and glossary of terms for the Vitagri White Paper: Growing Health — From Soil to Human Nutrition. It is published as a standalone companion to the White Paper, intended for readers who wish to explore the evidence base in full.

The document is arranged in three parts:

**Part A — References Directly Cited in the White Paper (refs 1–150)**

**Part B — Highly Relevant Further Reading (informed but not directly cited)**

**Part C — Glossary of Terms**

All references follow Vancouver citation style. Where DOIs are available these are included. Web sources include the date of access. Reference numbers are consistent with those used in the body of the White Paper. The Further Reading items retain their original reference numbers from the master list.

### Part A — References Directly Cited in the White Paper

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The following 130 references are those cited directly in the body of the White Paper. Reference numbers follow the order established in the full master list; some numbers are reserved for Further Reading items (Part B) and are not present in this section.

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## Part B — Highly Relevant Further Reading

The following sources informed the research and thinking underpinning the White Paper but are not directly cited in the body text. Original reference numbers from the master list are shown in brackets for cross-reference.

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## Part C — Glossary of Terms

The following terms are used throughout the White Paper. Definitions are provided in the context of this report.

<b>Aggregate stability</b>	The ability of soil aggregates to resist disintegration when subjected to disruptive forces.
<b>Agroecosystem</b>	A farming system viewed as an ecosystem, with soils, crops/livestock, water, and biological communities interacting.
<b>Anti-nutrients</b>	Naturally occurring compounds (e.g., phytates, oxalates, tannins) that reduce the absorption of nutrients.
<b>Arbuscular mycorrhizal fungi (AMF)</b>	Symbiotic fungi that colonise plant roots and enhance nutrient uptake, especially phosphorus and zinc.
<b>Bioavailability</b>	The proportion of a nutrient absorbed and utilised by the body after ingestion.
<b>Biofortification</b>	The process of increasing nutrient density in food crops through plant breeding, agronomic practices, or genetic modification.
<b>Cation exchange capacity (CEC)</b>	A soil's capacity to hold positively charged nutrients, influencing retention and availability.
<b>Catch crop</b>	A fast-growing, short-term crop (typically 6–8 weeks) established between harvest and autumn cash crop drilling to scavenge residual nitrogen and reduce leaching. See also: cover crop.
<b>Cover crop</b>	A crop grown over winter to protect and improve soil in readiness for a spring-drilled cash crop, rather than for harvest. See also: catch crop.
<b>Cultivar (variety)</b>	A plant variety selected for specific traits. Nutrient profiles can vary as much between varieties as between farming systems.
<b>Dilution effect</b>	Higher yields coinciding with lower nutrient concentrations per unit weight.
<b>Evidence tier</b>	A classification of evidence strength used in this paper (Tier 1: Strong through Tier 4: Insufficient).

<b>Food matrix</b>	The physical and chemical structure of a food that influences how nutrients are digested and absorbed.
<b>Haney soil test</b>	A holistic, lab-based soil health assessment developed by USDA-ARS scientist Rick Haney. Unlike traditional soil tests, it combines chemical and biological indicators — including microbial activity (CO <sub>2</sub> respiration), water-extractable carbon and nitrogen, and plant-available nutrients — to evaluate nutrient cycling, soil balance, and overall fertility.
<b>Microbiome (soil)</b>	The community of microorganisms in soil; a key driver of nutrient cycling and plant health.
<b>Nutrient density</b>	A measure of beneficial nutrients per unit of food or energy.
<b>Organic matter (soil)</b>	Carbon-containing material in soil; critical for fertility and structure.
<b>Outcome-based procurement</b>	Purchasing specifications that reward measured outcomes rather than only process or cost.
<b>pH (soil)</b>	A measure of acidity or alkalinity affecting nutrient availability and microbial activity.
<b>Phytonutrients</b>	Bioactive compounds produced by plants with health-protective properties.
<b>Post-harvest handling</b>	All steps after harvest that affect nutrient retention.
<b>Regenerative agriculture</b>	Approaches that aim to improve soil function and ecosystem outcomes over time.
<b>Rhizosphere</b>	The soil zone influenced by plant roots, where microbes and nutrient exchange are most active.
<b>Soil health</b>	The capacity of soil to function as a living system sustaining plants, animals, and people.
<b>Soil organic carbon (SOC)</b>	The carbon component of soil organic matter; a key metric for soil health.
<b>Soil respiration</b>	CO <sub>2</sub> release from soil due to microbial and root activity. A proxy for biological vitality.
<b>Tillage</b>	Mechanical soil disturbance. May adversely affect structure and biology when intensive.

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