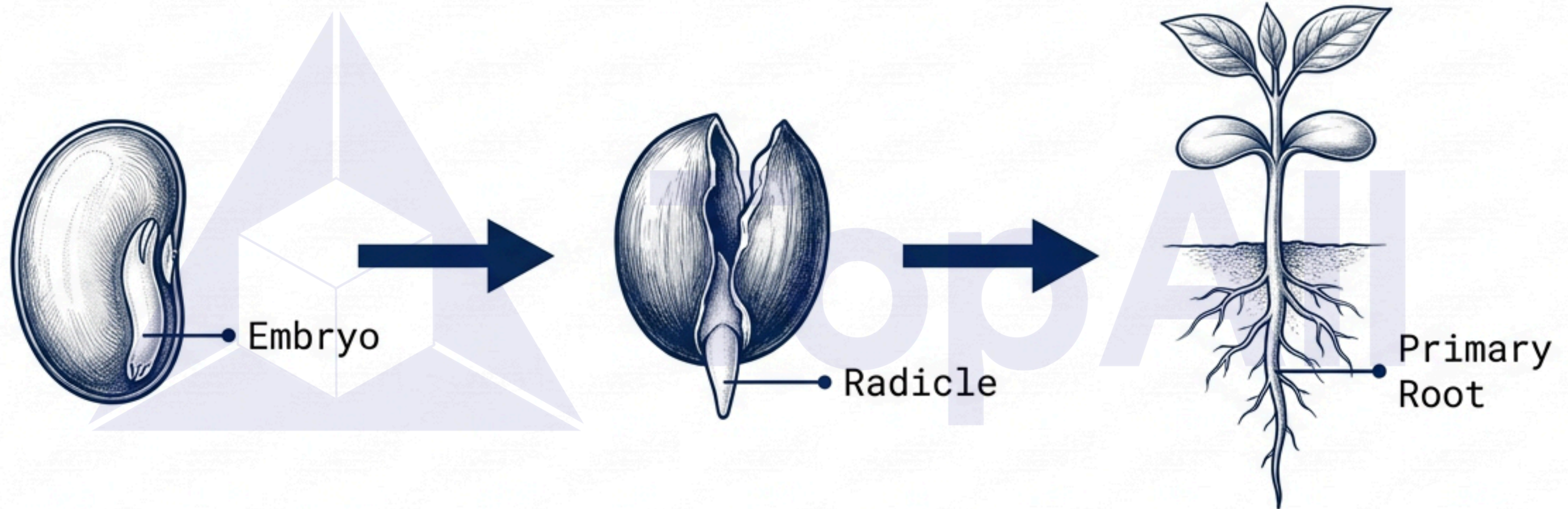


Tap, Fibrous and Adventitious Roots

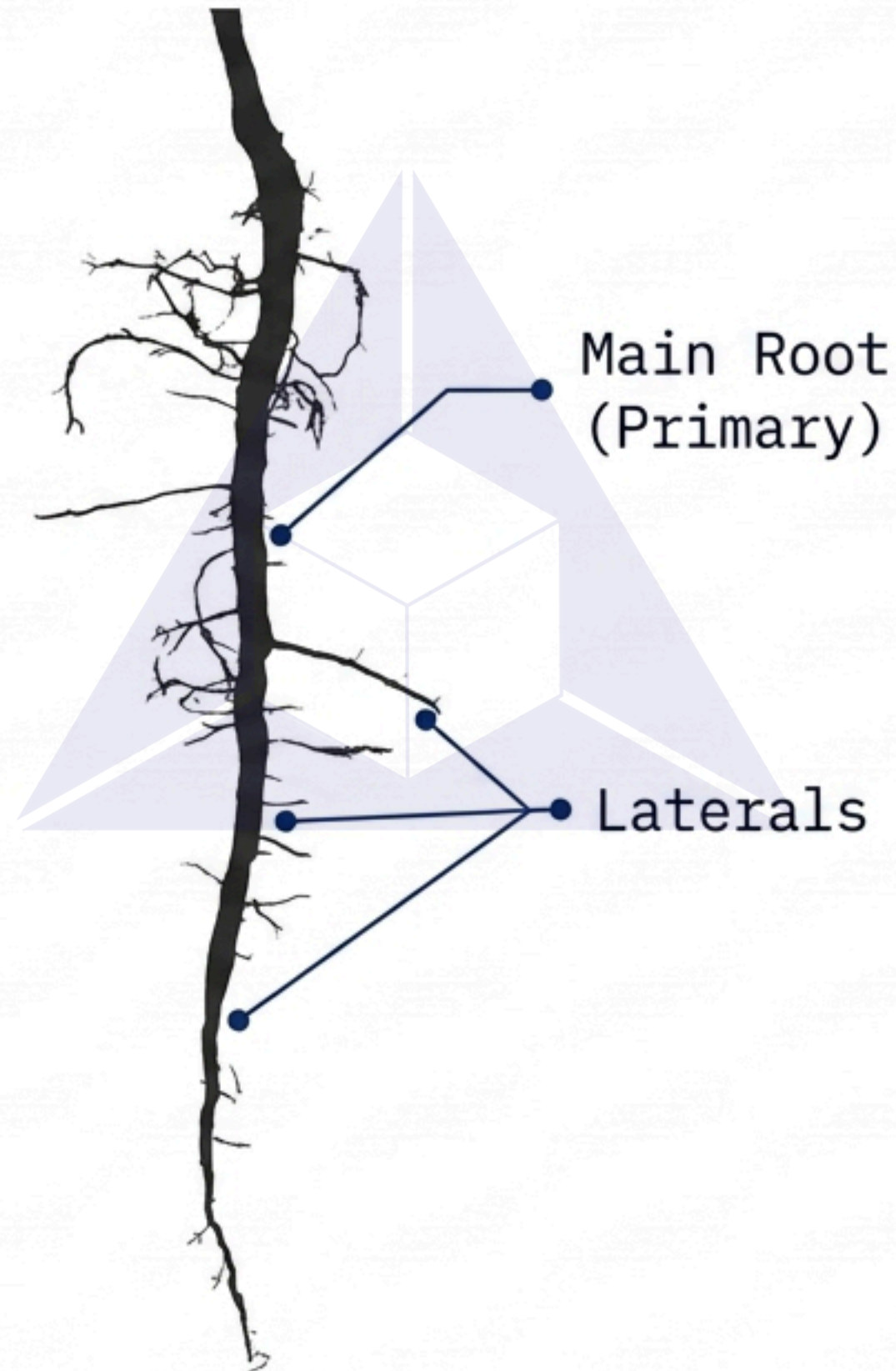
An Anatomical Breakdown
of Plant Root Systems

Origin of the Root System



The direct elongation of the radicle leads to the formation of the primary root, which grows inside the soil.

The Tap Root System



Example: Mustard Plant

The primary root bears lateral roots of several orders.

Primary → Secondary → Tertiary

Key Takeaway

This system is characteristic of the majority of dicotyledonous plants.



**You've Learned the Theory.
Let's Test Them Now.**

$$E=mc^2$$



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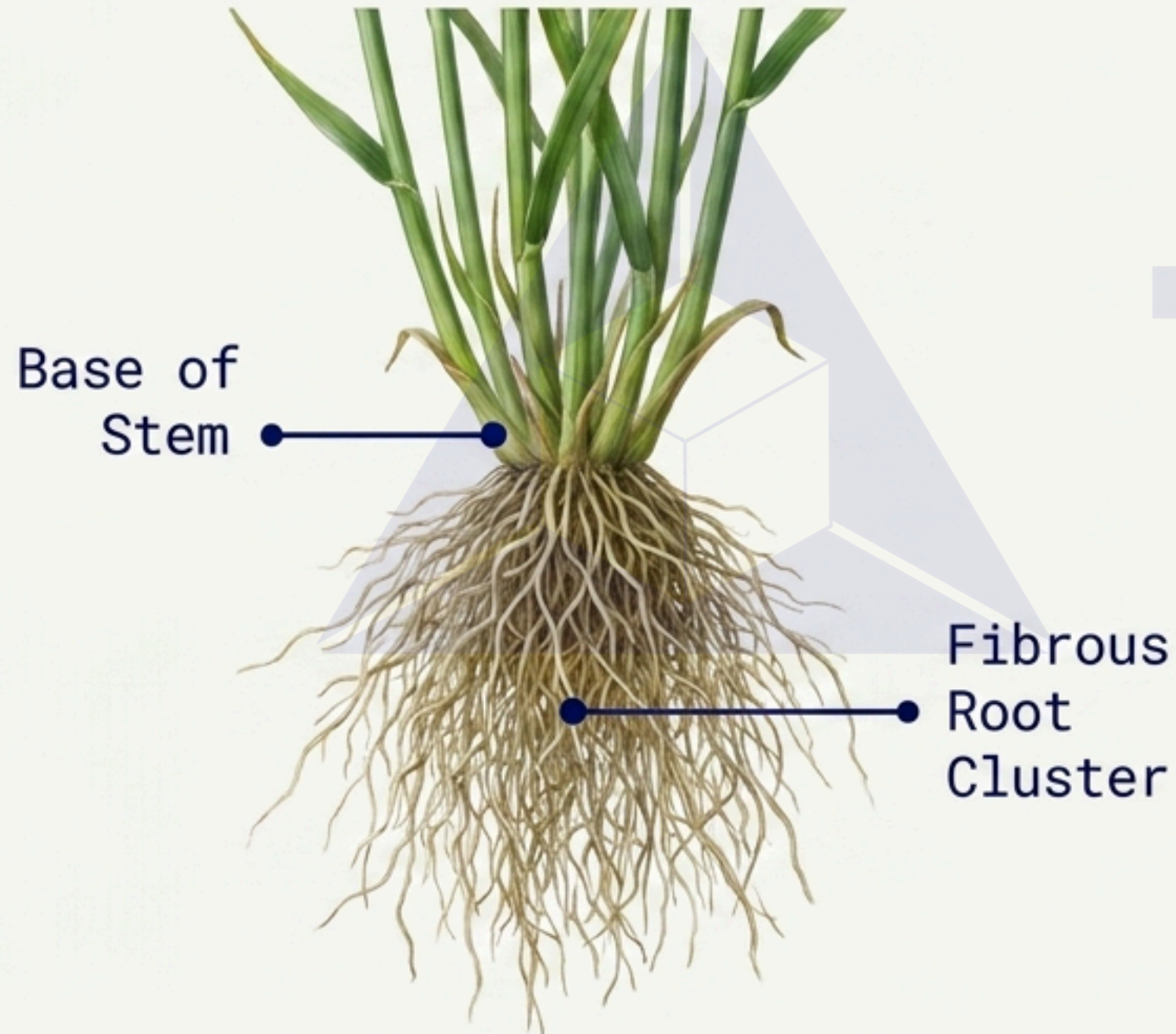
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- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
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- » Track Your Performance Smarter



The Fibrous Root System



Example:
Wheat Plant

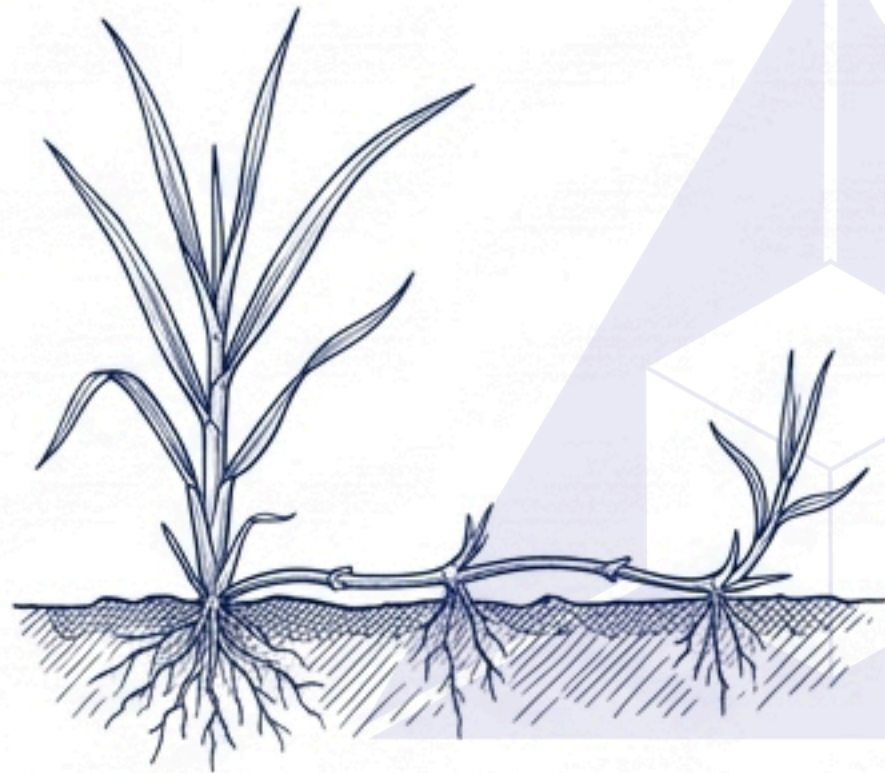
Classification:
Monocotyledonous



The primary root is short-lived. It is replaced by a large number of roots originating directly from the base of the stem.

The Adventitious Root System

Arises from parts of the plant OTHER than the radicle.



Stem-derived
roots

Provides rapid horizontal
expansion across topsoil.



Node-derived
roots

Aids in climbing and
supplementary anchoring.

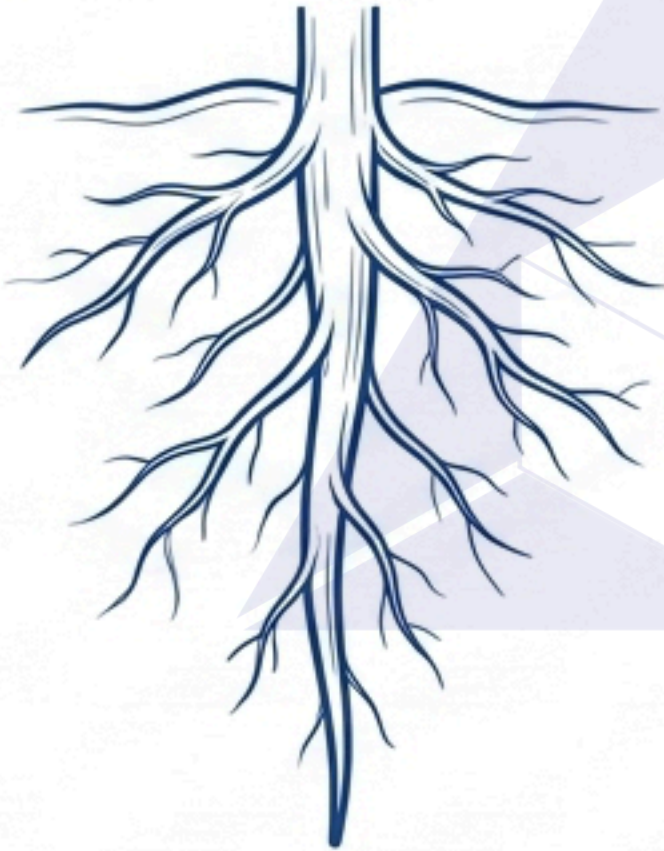


Branch-derived
prop roots

Provides massive structural
weight support.

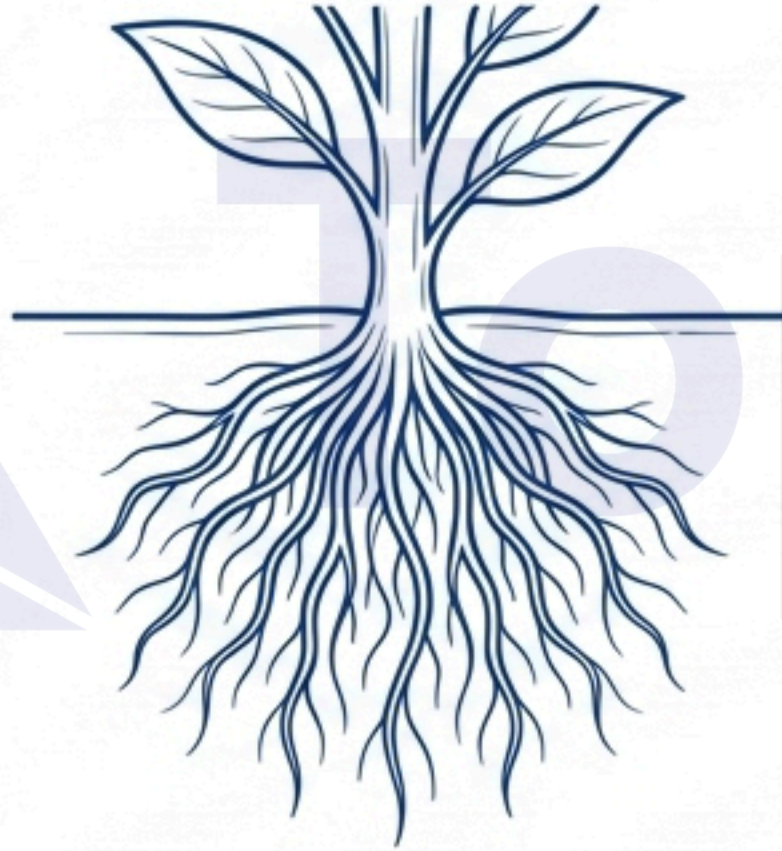
Diagnostic Matrix: Root System Comparison

Tap Root



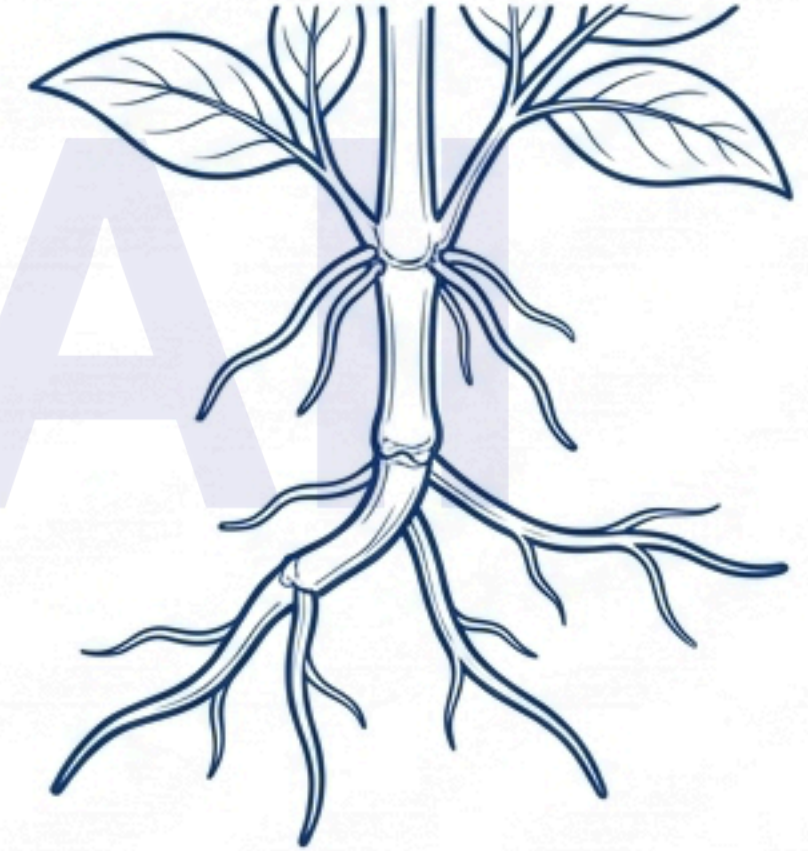
Origin: Radicle (Persistent)

Fibrous Root



Origin: Base of Stem

Adventitious Root



Origin: Non-Radicle Tissue

Core Functions of the Root System



Absorption

Uptake of water and essential minerals from the soil.



Anchorage

Providing a proper, stable physical hold for the plant parts above ground.



Storage

Storing reserve food materials for future metabolic use.



Synthesis

Synthesis of crucial plant growth regulators.



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