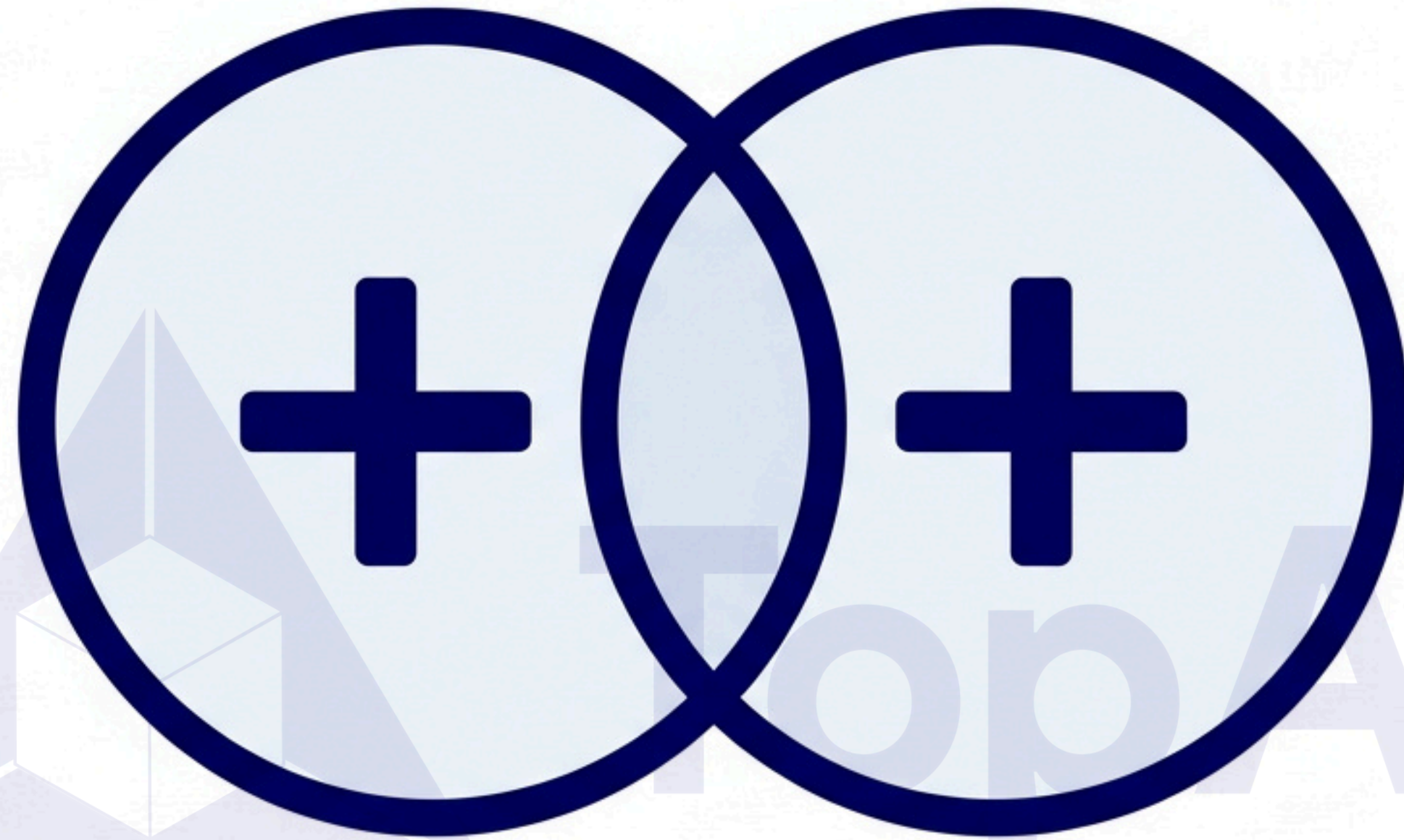




Mutualism

When both interacting species benefit.

The Interaction Matrix

Predation & Parasitism

$$[+ | -]$$

Mutualism

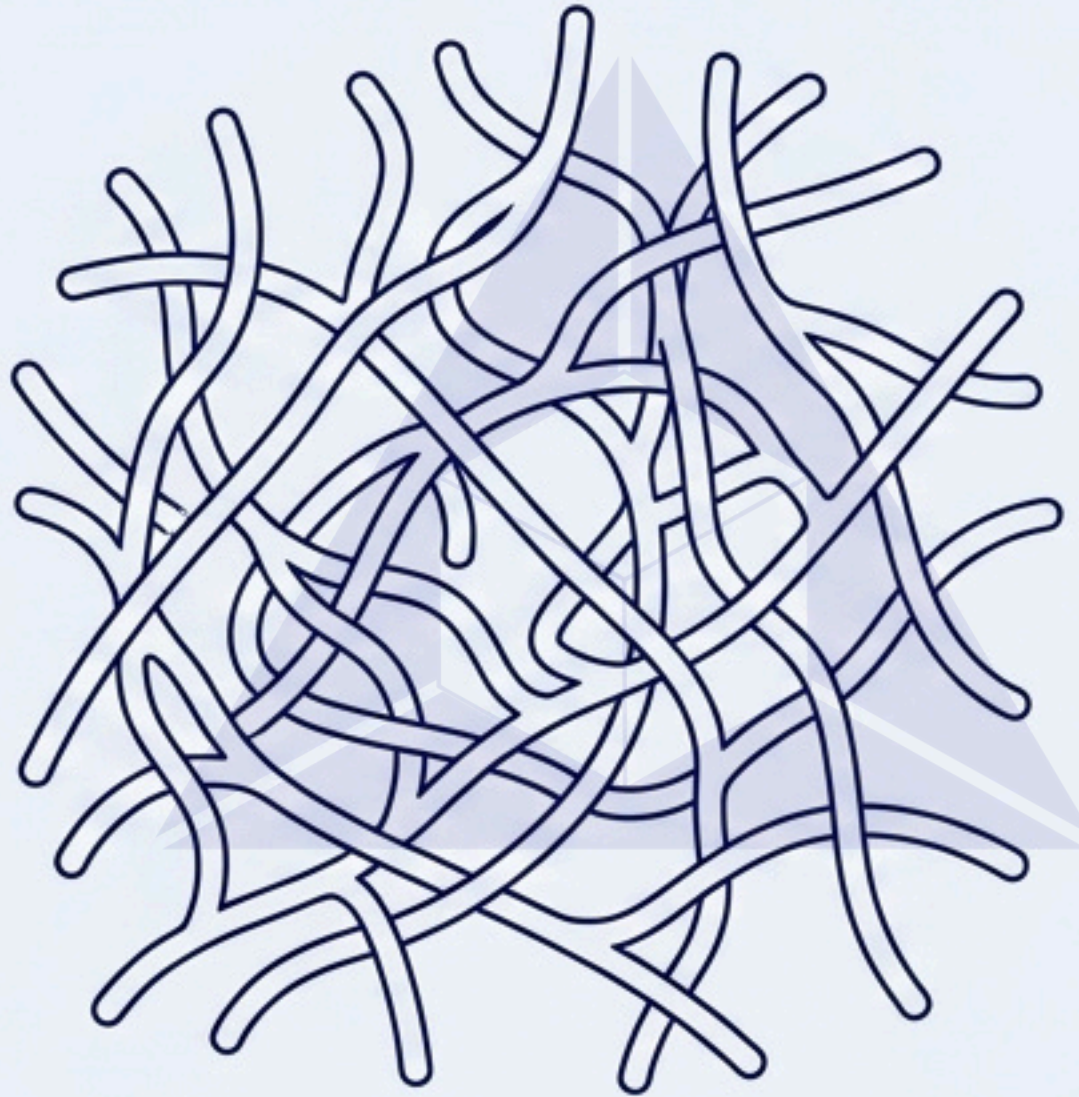
$$[+ | +]$$

In mutualism, both species derive functional, survival, or reproductive benefits from their interaction, creating a biological interdependency.

Commensalism

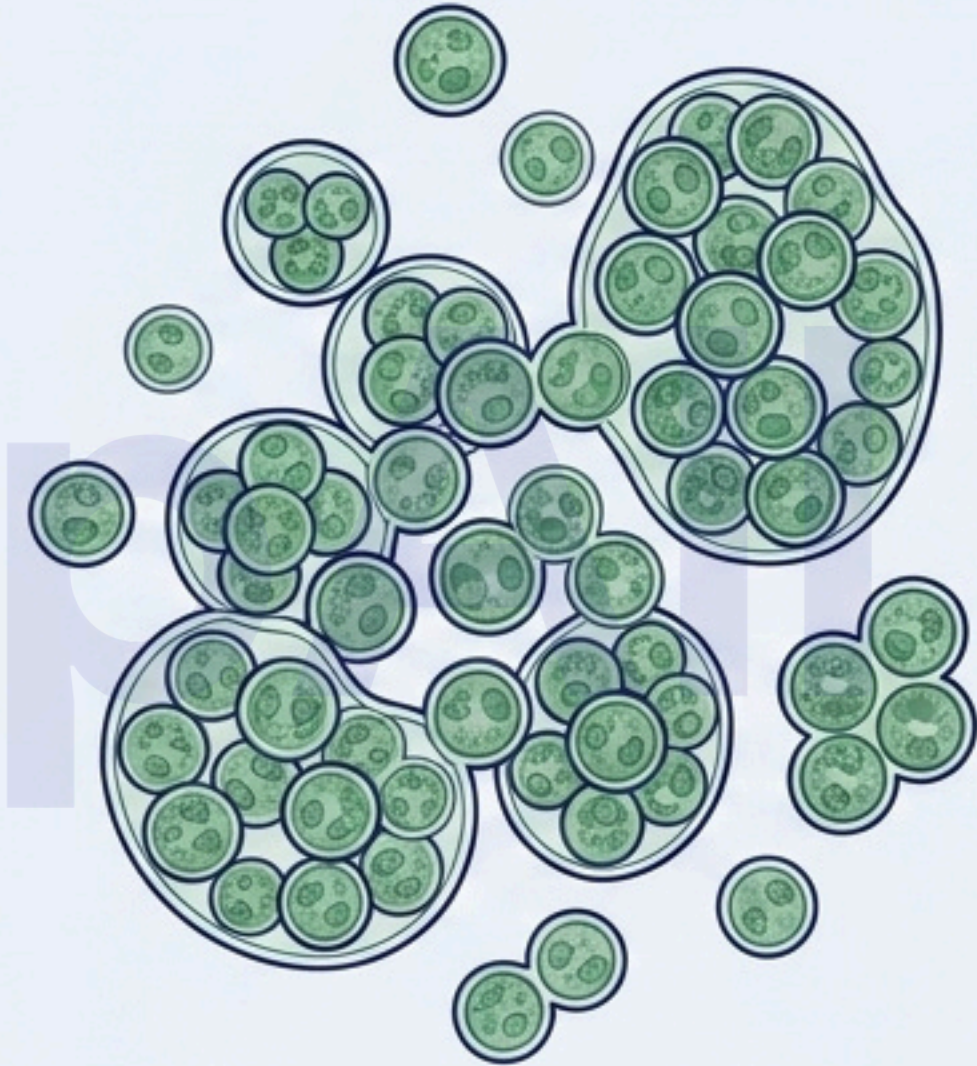
$$[+ | 0]$$

Micro-Partnerships: Lichens



Fungus

(Provides structural intimacy and absorption)



Algae / Cyanobacteria

(Provides photosynthesized energy)



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

$$E=mc^2$$



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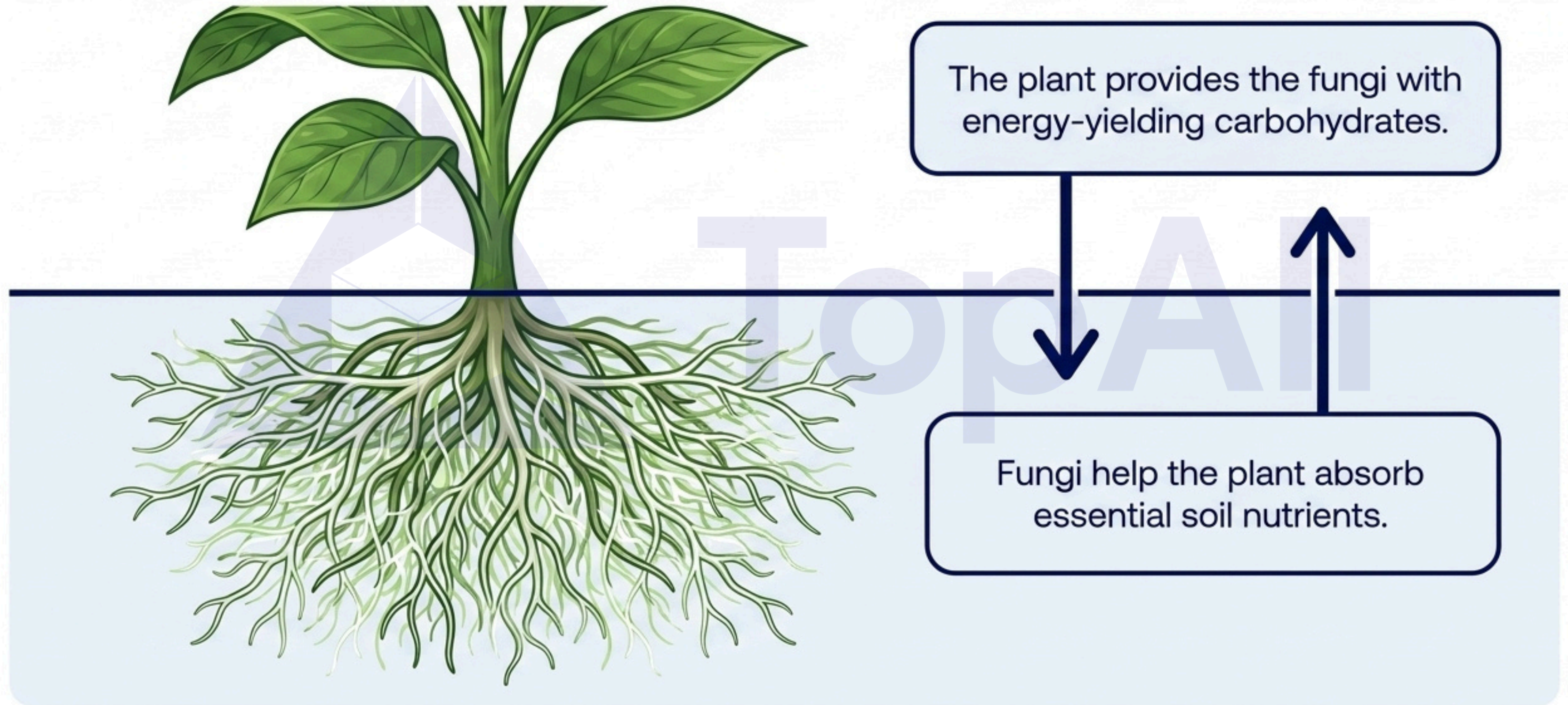
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Key Highlights

- » Free Study Material, Videos & Infographics
- » Push Your Limits with Level-Based Challenges
- » Climb the Leaderboard Among Fellow Aspirants
- » Practice Unlimited MCQs for NEET & JEE
- » Get Clear Explanations, Not Just Marks
- » Track Your Performance Smarter

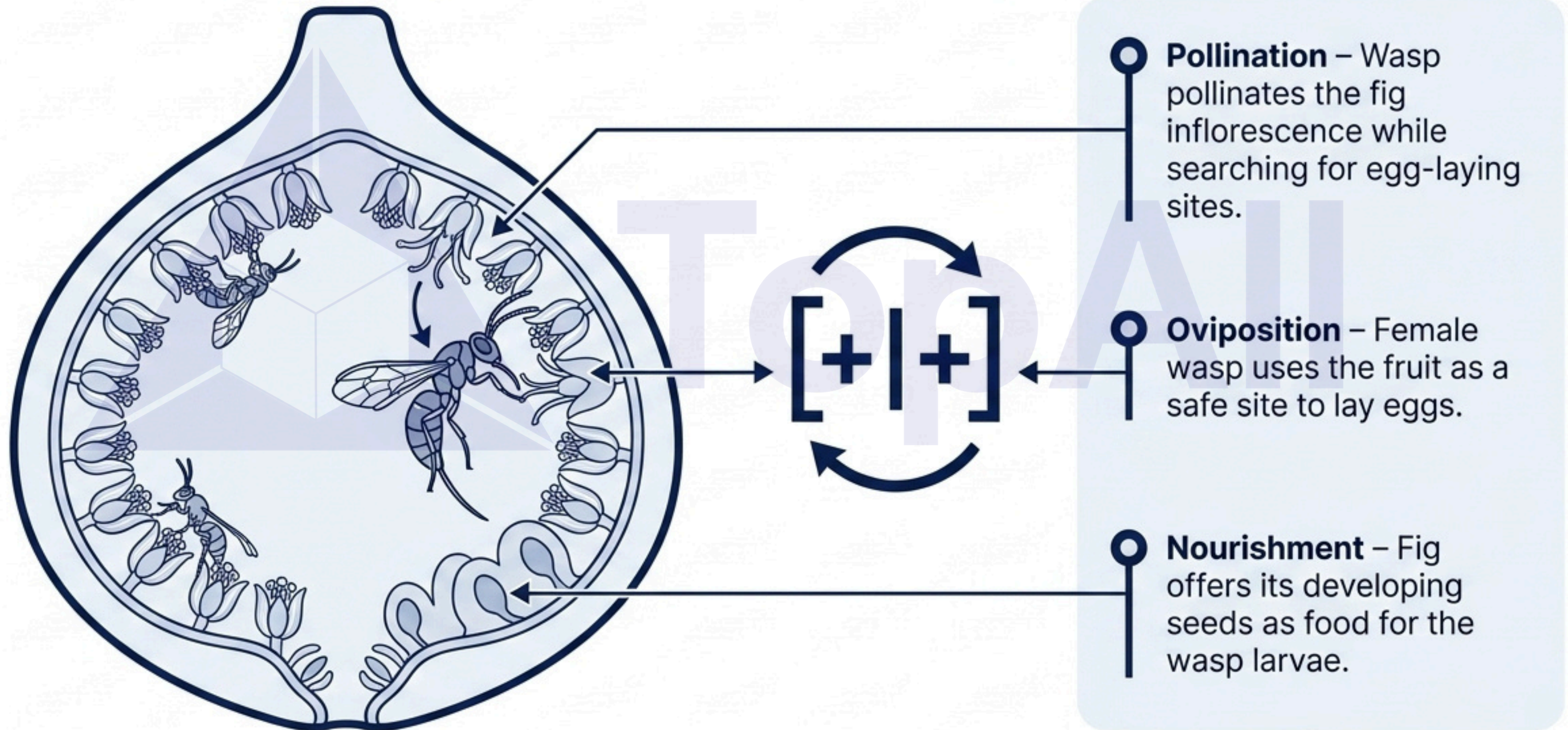


Underground Networks: Mycorrhiza



The Tight One-to-One: Fig & Wasp

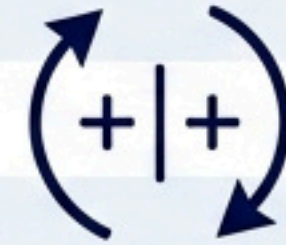
Many fig species have a strict one-to-one relationship with a specific partner wasp species.



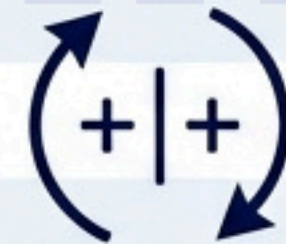
Behavioral Manipulation: “Sexual Deceit”



1. Mimicry: Orchid petal mimics the size, color, and markings of a female bee.



2. Pseudocopulation: Male bee is attracted and attempts to mate with the flower.



3. Pollen Transfer: Bee is dusted with pollen, which it transfers to the next deceptive flower it visits.

Mutualism Drives Co-Evolution



To safeguard mutually beneficial systems against 'cheaters', the evolution of the mutualists must be tightly linked.

Example: If the female bee's pattern changes slightly, the Ophrys orchid must co-evolve to maintain its deceptive resemblance, or face extinction.



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