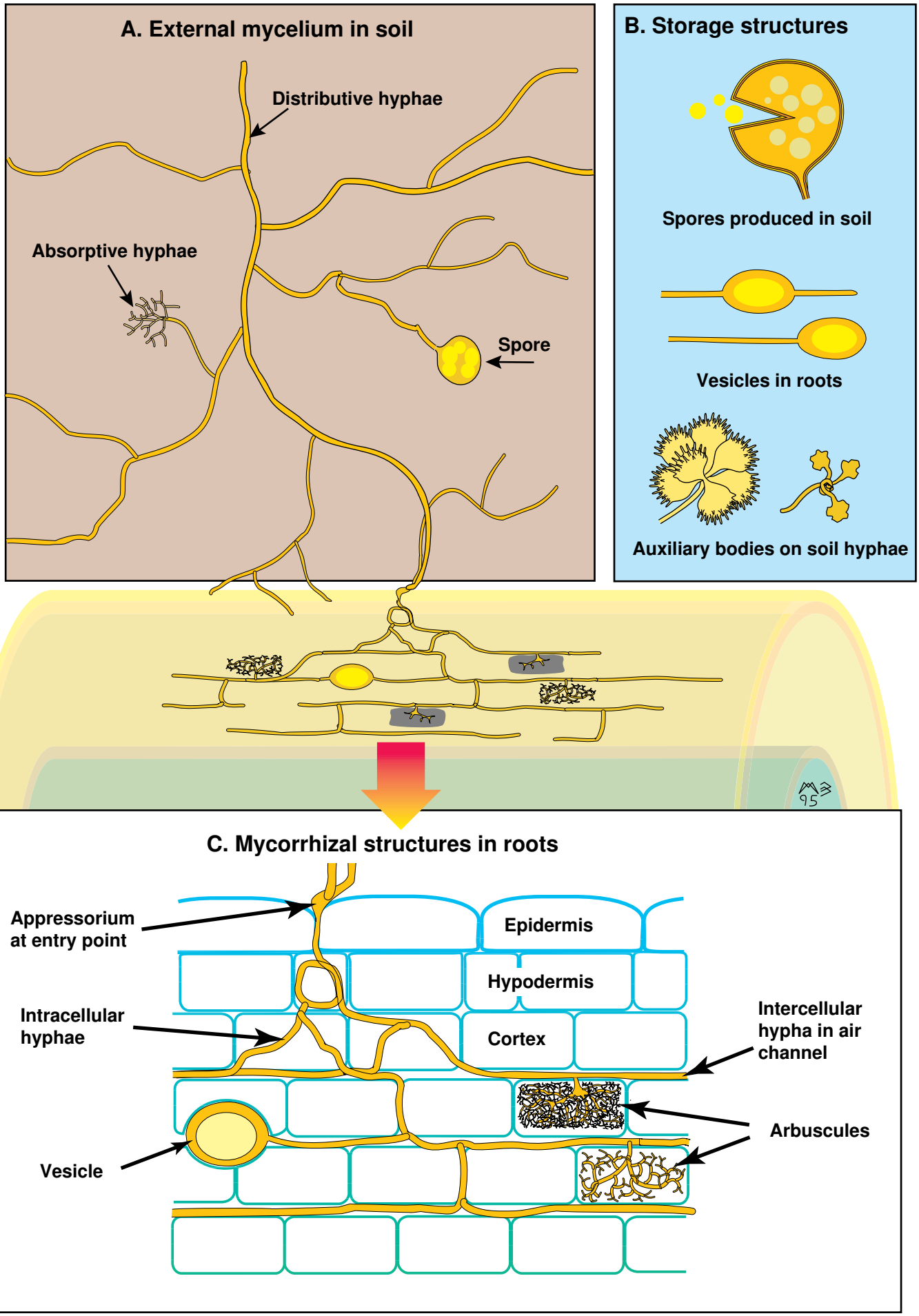
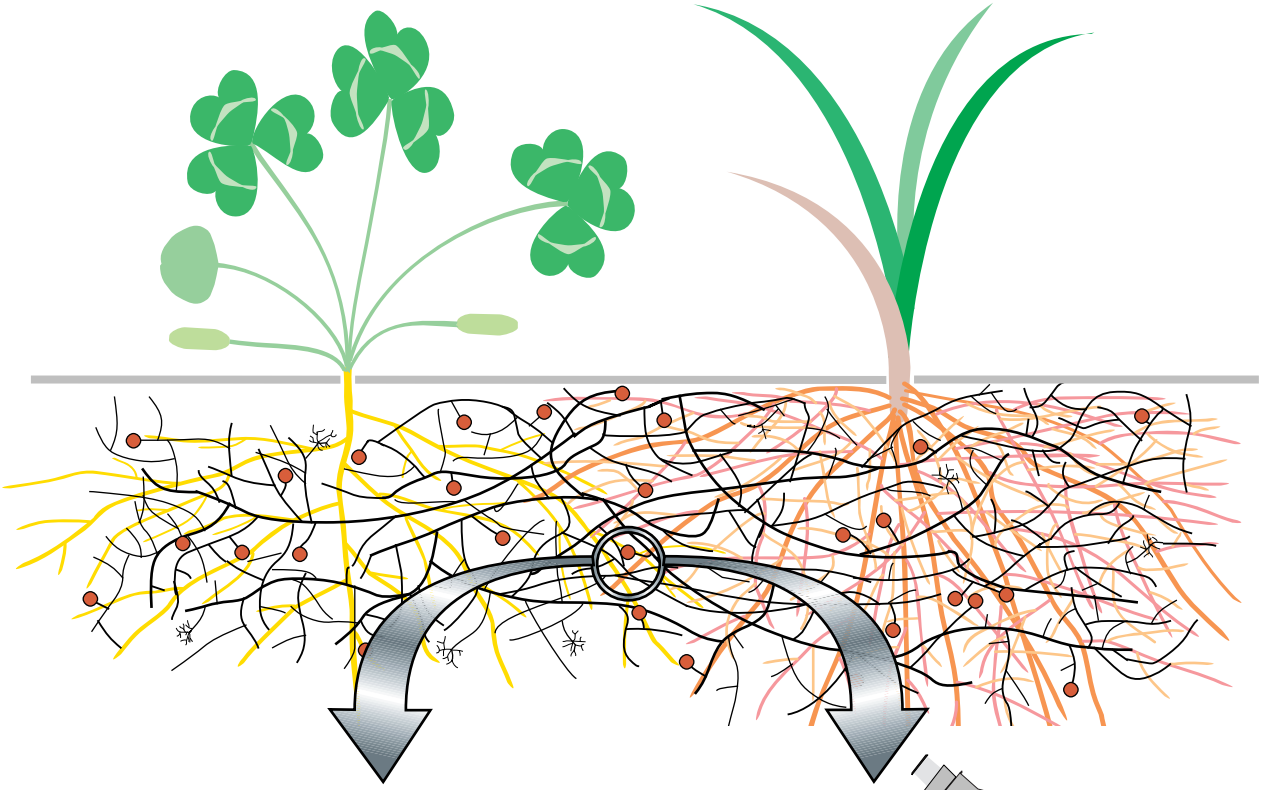
GLOMALEAN MYCORRHIZAL ASSOCIATIONS



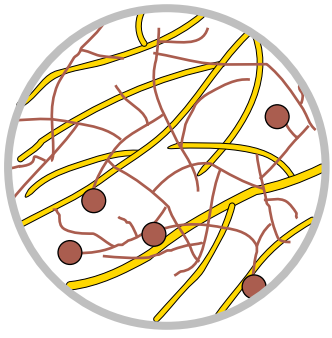
LOOKING AT VAM ASSOCIATIONS



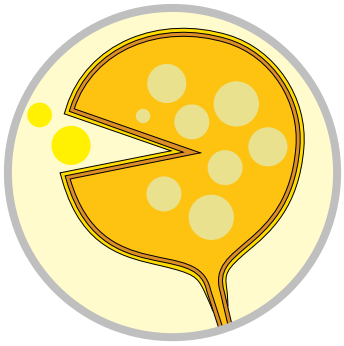
Dissecting microscope

Compound microscope

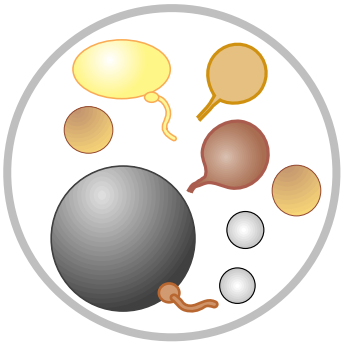
A. Root system with external hyphae and spores



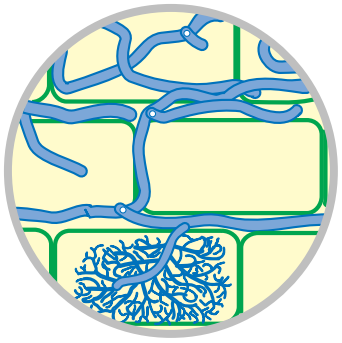
C. VAM fungus spore showing wall structure



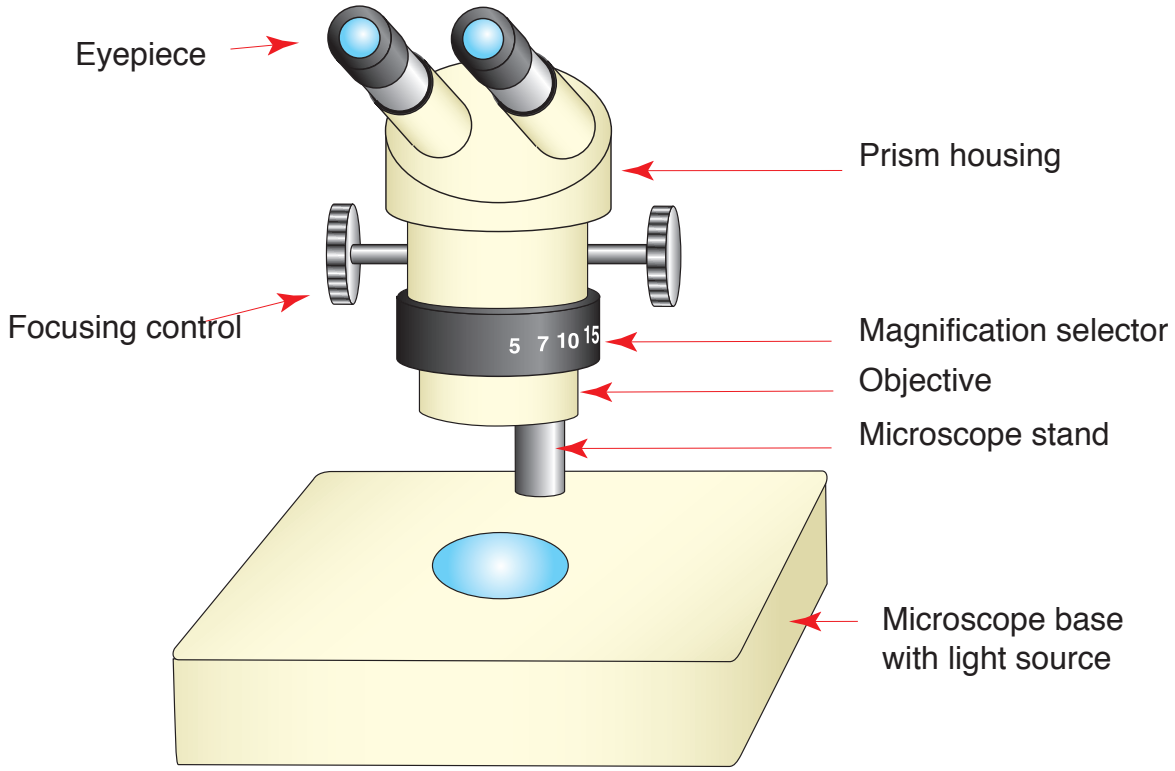
B. Spores of VAM fungi separated from soil



D. VAM fungi within cleared and stained roots



A. Dissecting microscope



B. Compound microscope

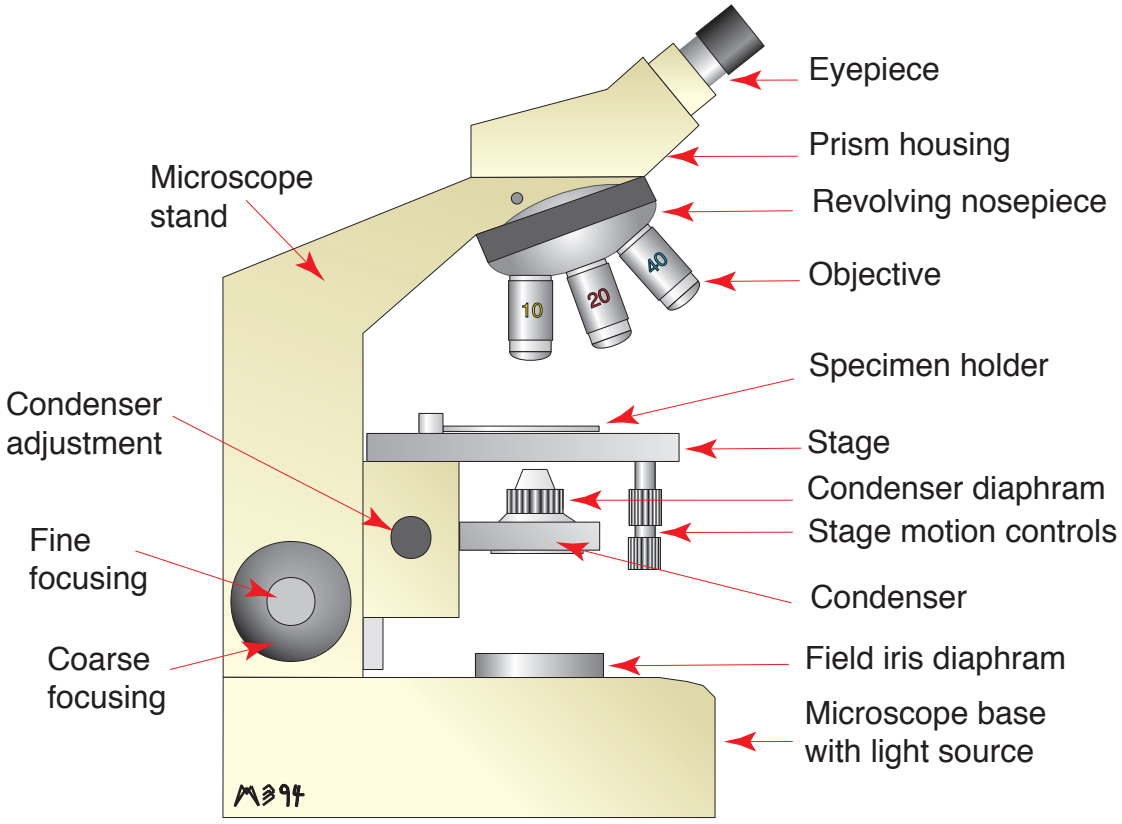


Figure 3.9. SEPARATING VAM FUNGUS SPORES FROM SOIL

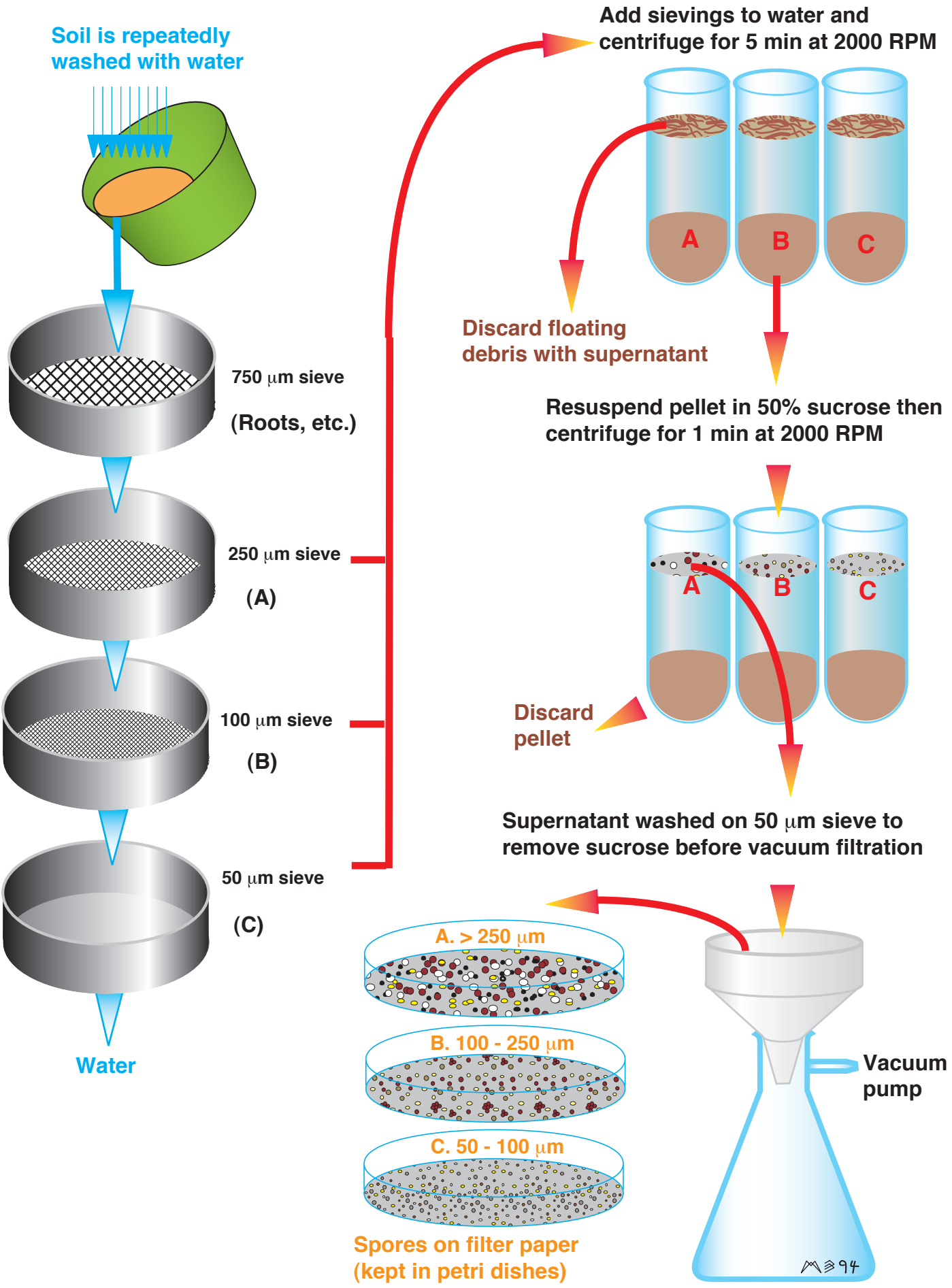
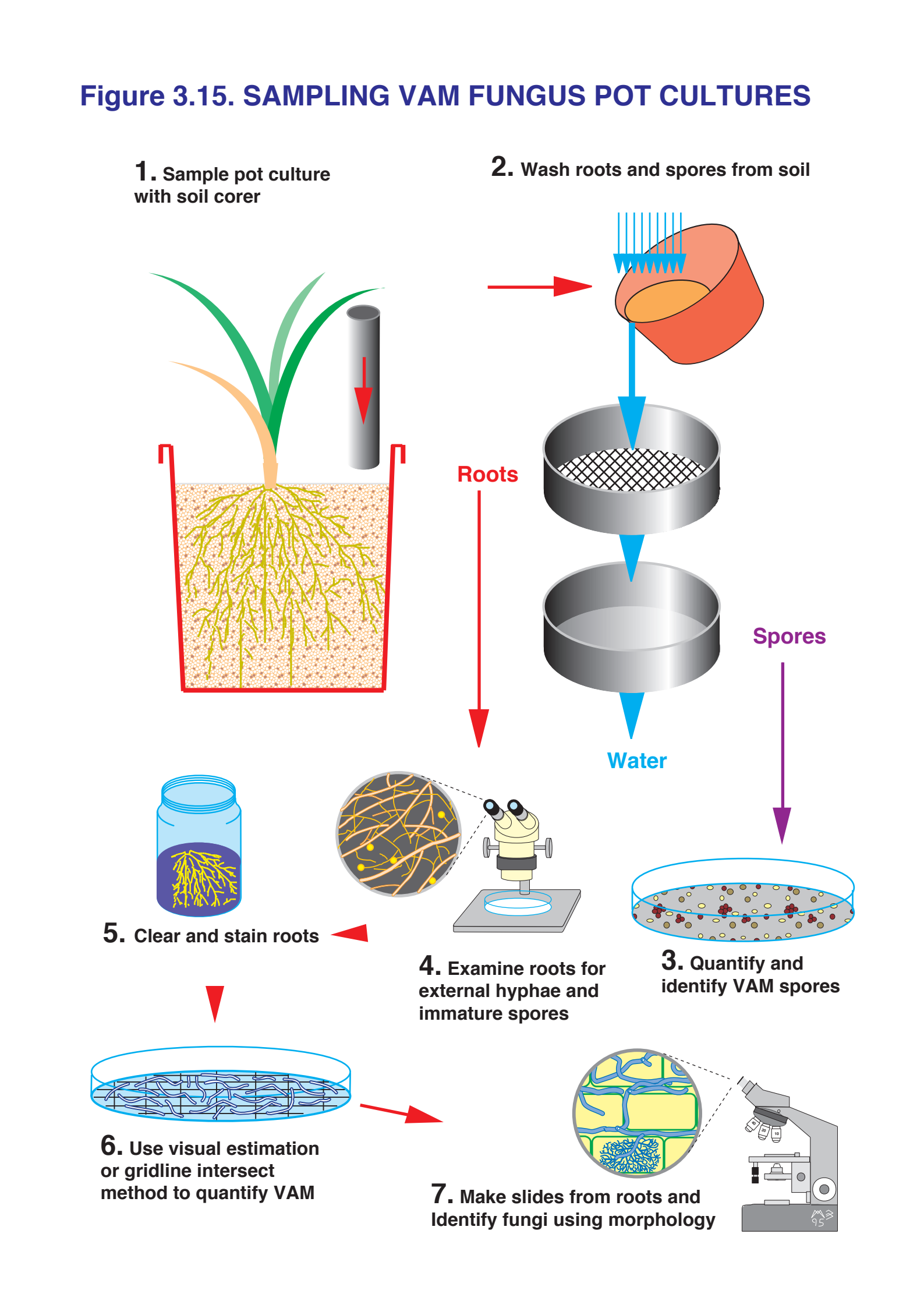
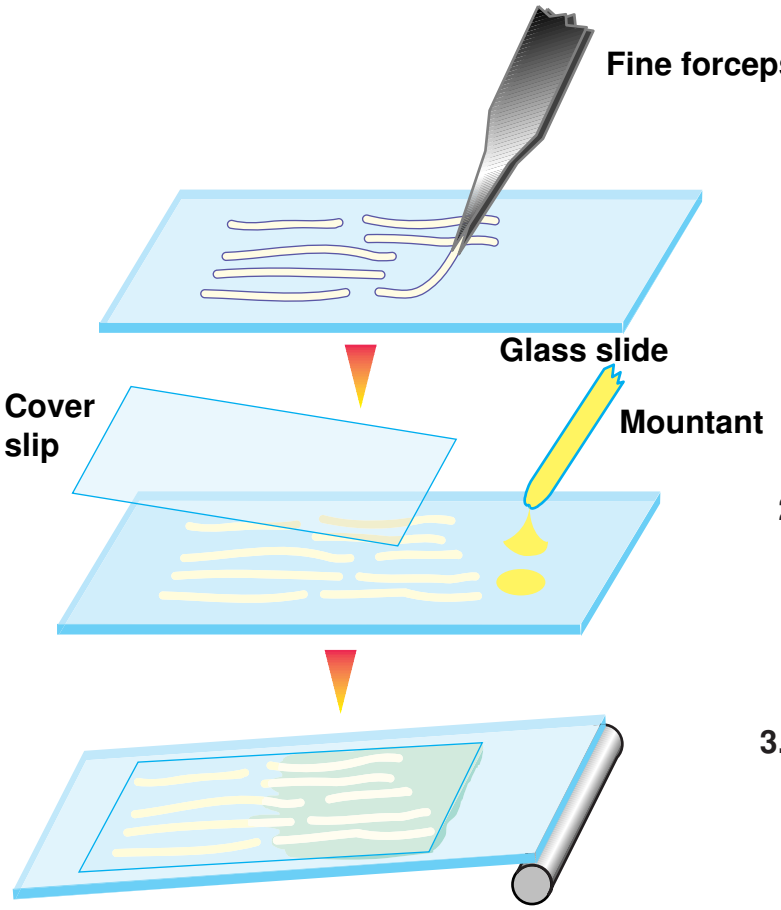


Figure 3.15. SAMPLING VAM FUNGUS POT CULTURES



MICROSCOPIC EXAMINATION OF ROOTS

A. Mounting roots on slides



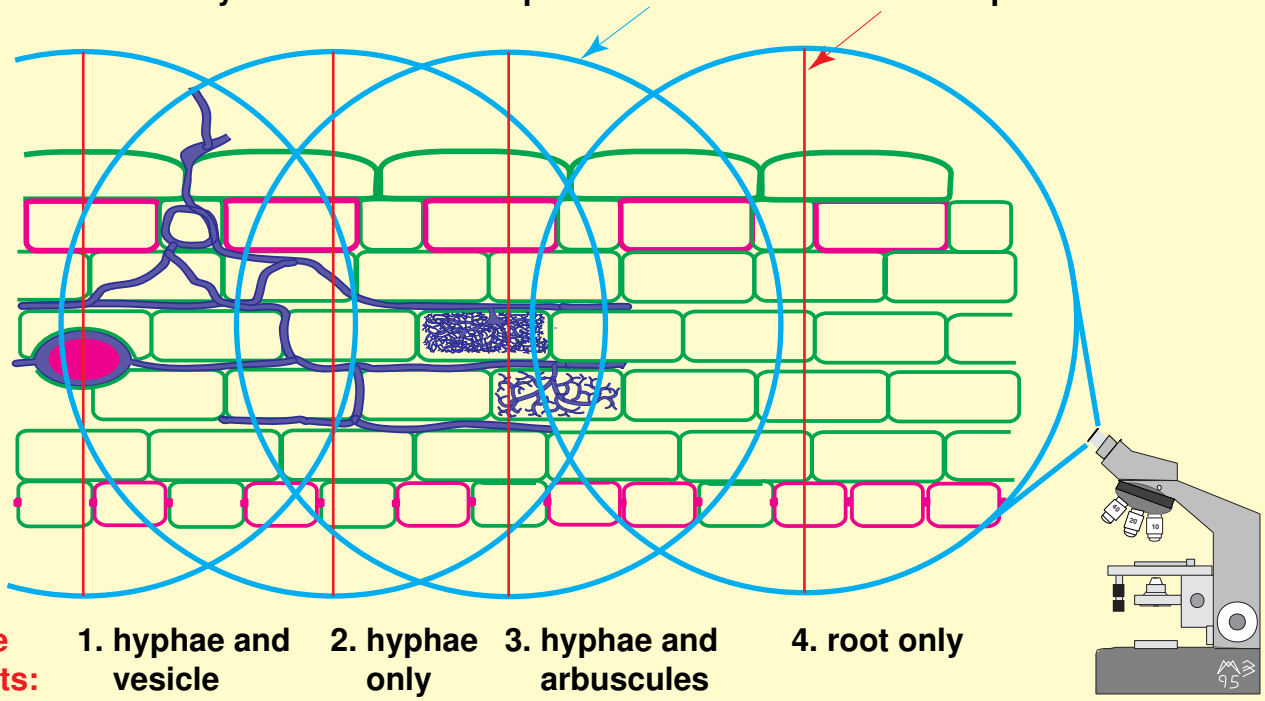
1. Arrange root segments lengthwise on slide with fine forceps

2. Add small drops of PVLG mountant at one end, then slowly lower cover slip at that end first

3. Allow mountant to flow around roots before gently tapping coverslip to flatten roots and remove air bubbles

B. Assessing mycorrhizas mounted on slides

Randomly selected microscope field of view and cross-hair positions



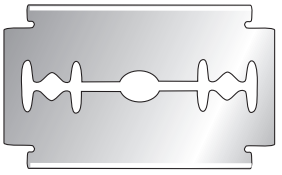
Possible intersects:

1. hyphae and vesicle
2. hyphae only
3. hyphae and arbuscules
4. root only

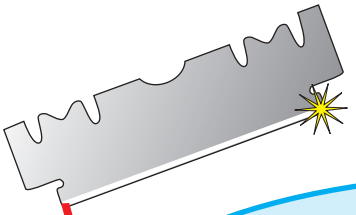
Figure 4.10. HAND SECTIONING FRESH MATERIAL

A. Parafilm method

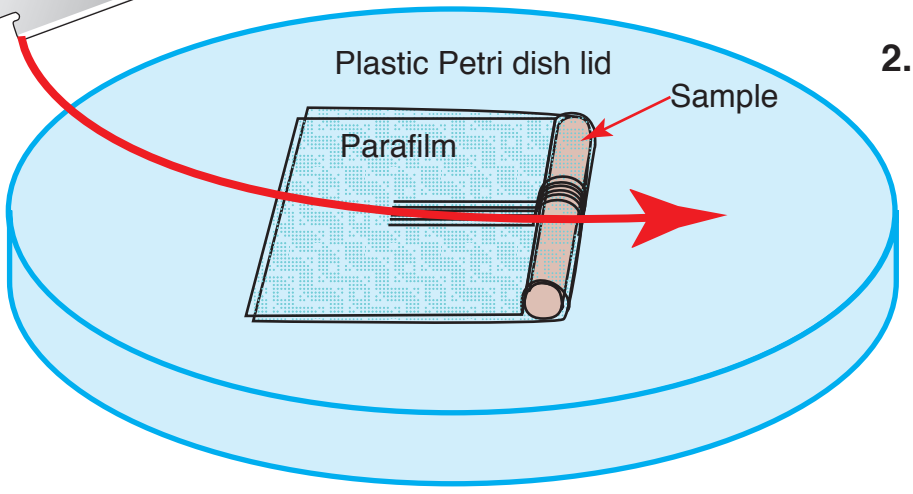
Use 1/2 of a sharp razor blade



Single edged blades are less effective



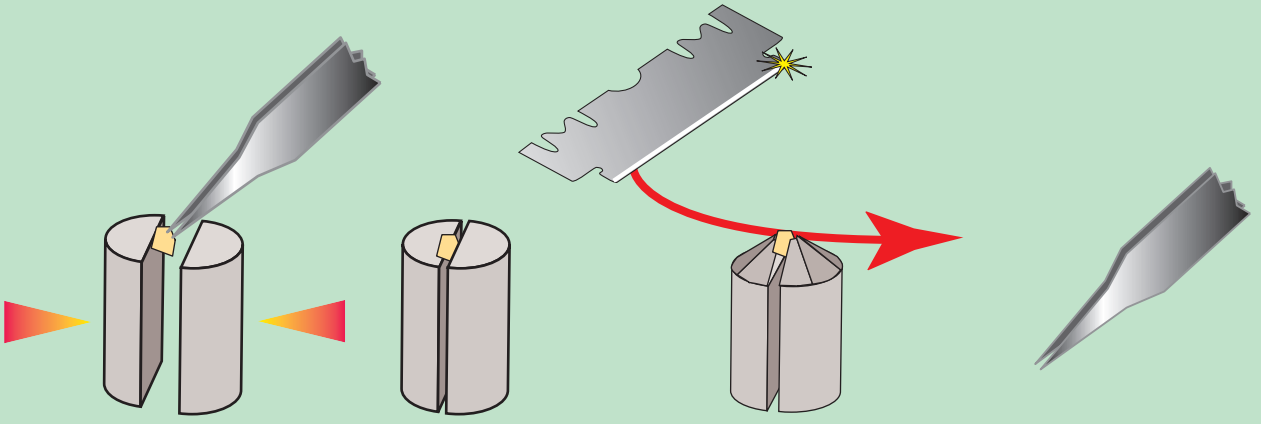
1. Immobilize sample between parafilm layers



2. Cut across tissue in rapid, continuous motions

3. Produce many sections and select the best under a dissecting microscope

B. Pith method



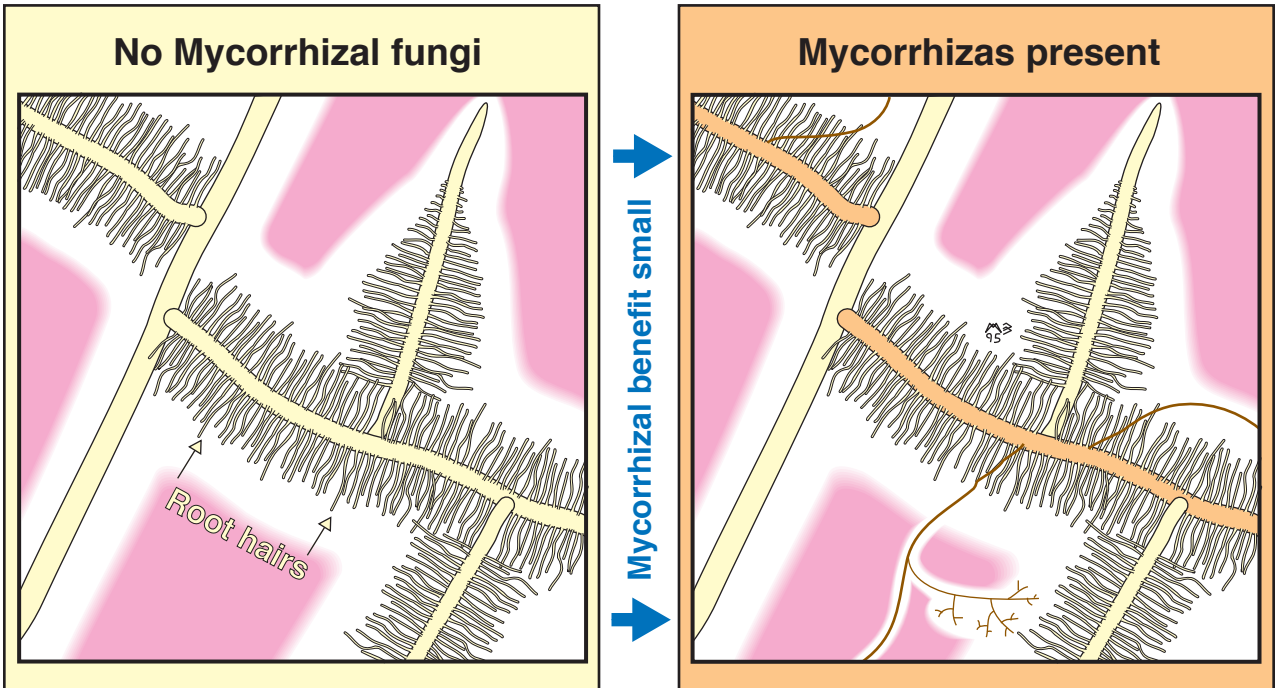
1. Gently immobilize tissue between two layers of foam or pith

2. Cut across tissue in even, continuous motions

3. Collect sections from razor blade with fine forceps or paint brush

PHOSPHORUS UPTAKE BY ROOT HAIRS OR MYCORRHIZAL FUNGUS HYPHAE

A. Plant with a fine root system and long root hairs



B. Plant with a coarse root system without root hairs