

The Brown Revolution

Farming Sunlight

Kris Nichols

Kristine.Nichols@ars.usda.gov

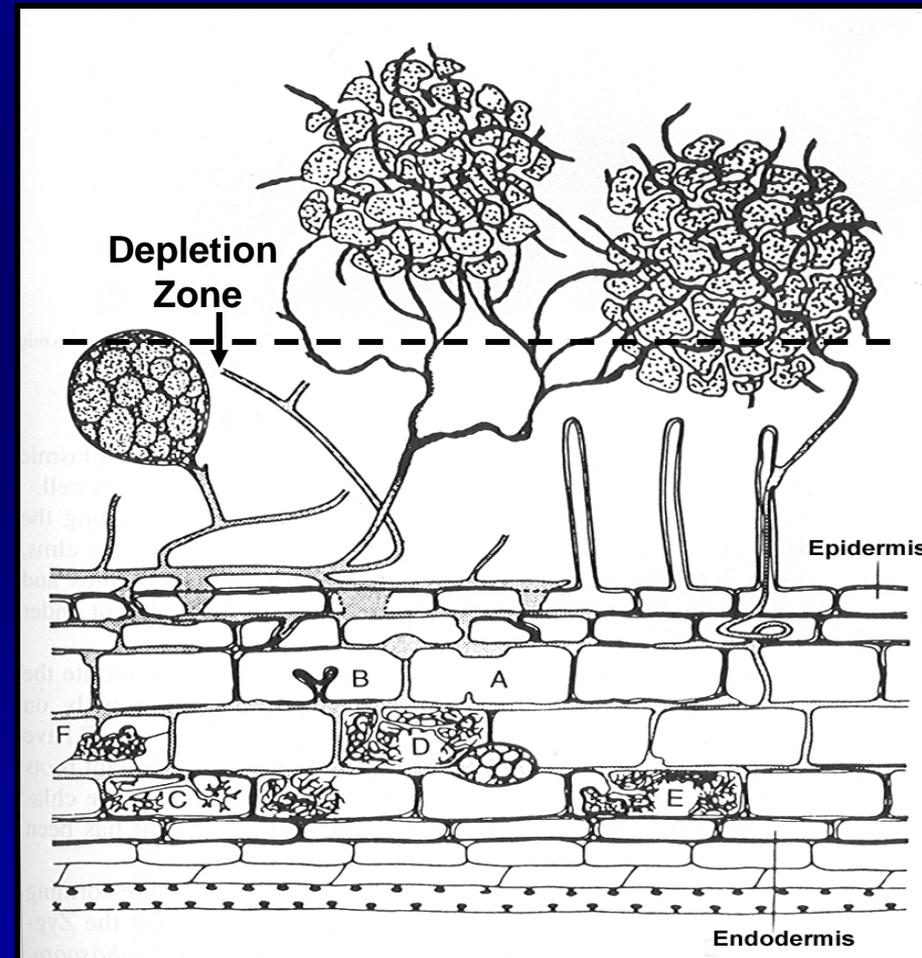


Agricultural Research Service

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What roles do mycorrhizal fungi have in the flow of carbon?

- Obtain nutrients from beyond depletion zones around roots
 - Grow about 1 to 2 inches out into the soil
 - Move P, N and other nutrients between plants
- Create mycorrhizosphere in soil
 - Assist with nutrient cycling
 - Form soil aggregates



Soil Aggregates

- Carbon in aggregates accounted for 20-47% of total carbon in NT systems and explained 45-87% of the difference between CT and NT
- Four times more of the aggregates in pasture soils were biologically formed compared to arable soils
- Soil organic matter is <5% of soil by weight but controls >90% of the processes
- As soil organic matter increases from 1% to 3%, the available water holding capacity of the soil doubles (Hudson, 1994).
- Worldwide, approximately 56% of soils are degraded by water erosion and 28% by wind erosion.