

TAKEAWAYS



Soil Health in the Mid-South: First Step—Feeding the Soil Microbes

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- Soil composition by volume should be half mineral content (45%) and organic matter (5%) and half water (25%) and air (25%).
 - Highly tilled soils with poor soil structure don't have 50% water and air.
 - Cotton doesn't like wet soils; it must have oxygen.
- In the off-season, the most important purpose of planting cover crops is to help feed the soil microbes. It's important to have living roots in the soil as much of the year as possible.
- Bacteria and fungi are among the types of soil organisms. When they do well, everything else does well. The presence of earthworms is a good indicator of soil health.
- A basic cotton-strip test ("Soil your undies") can be used to assess soil health. Bury the cotton fabric and see how quickly it degrades. It will degrade quickly in healthy soil.
- Healthy soil has increased internal drainage due to improved soil structure and biological activity.
 - When soil structure is improved:
 - There is greater internal drainage.
 - Rainfall is harvested and stored.
 - Bed height can be reduced.
 - Reducing tillage and using cover crops greatly enhance soil health.
- Soil health can be assessed with biological, chemical, and physical analyses. It can also be judged based on observations about levels of water infiltration and soil runoff and how often ditches need to be cleaned.
- At year-end, the benefits of improving soil health and planting cover crops are realized in higher yields. This is particularly true in dry years, when growers do a better job of harvesting rainfall and getting water infiltration to the soil.
- Growers can usually produce cotton more cheaply if they improve the efficiency of inputs, such as irrigation water.