Principles of

Soil Health for Organic Producers in the South

Key Takeaways from our guidebook and course: Building Healthy Living Soils for Successful Organic Farming in the Southern Region

Hot, humid climates and low-fertility soils pose substantial production challenges for organic farmers in the south. There are several key principles and organic management practices that help sustain crop production while building soil organic matter for long-term benefits including improved fertility and water holding capacity, disease suppression, and resilience to climate change and other stresses.

Keep the Soil Covered

Try mulching or using cover crops to protect the soil surface from weather extremes and prevent compaction, crusting, and erosion. For cover crop mixes, including a legume, grass, and a non-legume work well in any season.

Maintain Living Roots

Many soil organisms depend on root exudates and fine root sloughing for their “daily bread” especially in soils where other organic residues decompose and disappear rapidly. Living roots take up nutrients so they do not leach into groundwater.

Maximize Crop Diversity

Crop diversity enhances soil organic matter stabilization and other key biological functions. Grow crops with different root depths and architecture to enhance soil structure and water and nutrient use efficiency. If possible plant deeper rooted perennials

Minimize Soil Disturbance

Disturbances can be physical (tillage, traffic), chemical (concentrated fertilizers, pesticides), and biological (overgrazing, invasive exotic species). Soil disturbance and hot weather can quickly destroy soil organic matter and the organisms responsible for improving tilth and fertility. When possible no-till or decrease your tillage depth.

Integrate Crops and Livestock

Crop-Livestock integration practices enhance nutrient cycling and minimize the need to import nutrients in the form of fertilizer or livestock feed. Grazing can reduce the need for tillage prior to planting the next production crop.

Consider the Law of Return

Hot climates “burn up” soil organic matter and harvesting removes biomass from the land. Organic matter as well as nutrients must be replenished without overloading P or other nutrients. Cover crops and on-farm generated organic residues can be used to replenish organic matter.

ORGANIC FARMING RESEARCH FOUNDATION

Organic Farming Research Foundation is a non-profit organization founded in 1990 that works to advance organic agriculture through scientific research. As a champion of organic farmers across the U.S., we foster the improvement and widespread adoption of organic farming systems by cultivating organic research, education, and federal policies that bring more farmers and acreage into organic production. All of our educational materials are online and available for free and can be found online: www.ofrf.org

DIG DEEPER

- Building Healthy Living Soils for Successful Organic Farming in the Southern Region - OFRF Guidebook
- National Organic Research Agenda Report - An OFRF report informed by surveys and focus groups conducted in 2020 with over 1,100 certified organic and 71 transitioning-organic farmers and ranchers across North America.
- Southern Cover Crop Council. - Resources for finding the right cover crop for your area.