MINIMIZE SOIL DISTURBANCE

FACT SHEET

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Key Farm Practice

Minimizing soil disturbance is one of the most common Regenerative Agriculture objectives for farmers. Farms are independent businesses where harvest value must exceed costs over the long term, and cost savings have been the main incentive for this practice.

Key Points

- Every tillage pass exposes soil to oxygen, accelerating the decomposition of organic matter.
- Each pass disrupts macropores from dead roots and earthworms where water can infiltrate.
- Mixing leaves and stems with deeper soil leaves the surface vulnerable to erosion and baking.
- The soil microbiome, especially the delicate mycorrhizal fungi networks, is disrupted by tillage.

Adoption in Cotton

Cotton is ideally suited to minimizing soil disturbance because the large cotton seed can germinate without fine seedbeds and weeds can be controlled without cultivation. Many growers begin by reducing weed cultivation and then transition to no-till (zero-till) as cost savings and soil health improve annually.

Benefits

- Reduces fuel, labor, and equipment costs.
- Improves soil structure and organic matter retention.
- Enhances water infiltration and drought resistance.
- Reduces erosion and maintains soil microbiome health.

Minimizing tillage protects soil structure, cuts costs, and builds resilience, making cotton farming more sustainable year after year.