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Soil types and its infiltration, absorption, seepage and holding capacity

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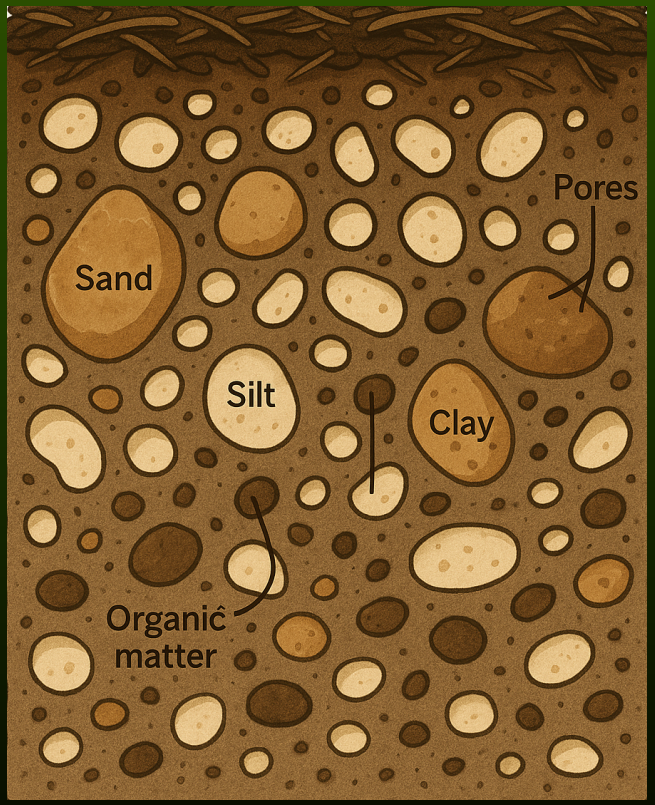
Introduction to Soil and Water Absorption

Introduction to Soil and Water Absorption

- Soil is a mix of sand, silt, clay, and organic matter. The right balance of these components, when not compacted, allows soil to absorb and retain water effectively.
- Water is absorbed by soil through available pores, and pore size determines how much water the soil can hold (field capacity).
- Soil is made of sand, silt, clay, and organic matter. When balanced and not compacted, it holds water in tiny pores. The size of these pores determines how much water soil can store, known as field capacity.



Healthy soil structure is critical for water retention and crop growth. Diverse crop root establishment and retention play an important role where mineral particles in soil are not balanced, collapsed, or have small pores.

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What is "Gusra" Soil? Fine Silt - Gusra soil

What is "Gusra" Soil?

- “Gusra" is a local term for a mineral particle smaller than silt but larger than clay. It affects soil structure and water absorption.
- Gusra soil with low organic matter has reduced water infiltration capacity, even when not compacted.

Gusra soil, a local term for particles smaller than silt but larger than clay. Gusra affects how water moves through your fields. If your soil has low organic matter or is compacted, it struggles to absorb and infiltrate water.

Gusra is common in some regions and impacts water movement. Emphasize the need for organic matter to improve structure.

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Diverse Cover Crops for Better Soil Health

Diverse Cover Crops for Better Soil Health:

- Growing diverse cover crop species creates a varied root network at different soil depths, enlarging pores and improving water absorption.
- Diverse roots enhance soil structure, increase field capacity, and reduce standing water.

The solution? Plant diverse cover crops like legumes, grasses, and radishes. Their varied roots grow at different depths, opening up soil pores and boosting water absorption. This improves your soil's structure, increases its water absorption and holding capacity, and reduces standing water.

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Measuring Field Capacity

Measuring Field Capacity: To assess soil water absorption:

1. Use a 6-inch diameter, 12-inch long steel pipe.
2. Press the pipe vertically into the soil.
3. Pour 1 liter of water into the pipe and time absorption with a stopwatch.
4. Repeat with another liter to confirm field capacity.

- This method helps estimate how quickly soil absorbs water, guiding irrigation and soil management.

Want to know your soil's water-holding capacity? Use a simple test! Take a 6-inch wide, 12-inch long steel pipe and press it into the soil. Pour in 1 liter of water and time how long it takes to absorb using a stopwatch. Repeat with another liter to confirm your soil's field capacity.

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Key Takeaways

Key Takeaways

- Soil composition (sand, silt, clay, Gusra, organic matter) determines water absorption.
- Hardpan reduces infiltration; diverse cover crops and organic matter improve it.
- Test field capacity to understand your soil's needs.
- Visual Recommendation: Collage of healthy soil, cover crops, and a farmer testing field capacity.

Your soil's mix of sand, silt, clay, Gusra, and organic matter controls how it holds water. Hardpan blocks water flow, but diverse cover crops and organic matter can fix this. Regularly test your soil's field capacity to ensure healthy crops and better yields.