Encouraging good soil health

Why soil health?
- Identify constraints
- Monitor changes
- Build equity

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How to measure soil health
1. General field observations
2. Field indicators
3. Comprehensive soil tests

General field observations
- How is your health?

Dr. Abbey Wick, North Dakota State University

Field indicators
- Soil health scorecards
  - Crop Resid.
  - Water Flow
  - Soil Fertility
  - Soil Erosion
  - Soil OM
  - Soil Color
  - Soil Bioactivity
  - Soil pH
  - Soil Crust
  - Soil N
  - Cover Crop

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Field indicators
- Aggregates
- Slake test

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Field indicators

• Soil crusting, ponding, runoff and erosion

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Field indicators

• Soil tilth and hardness

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Field indicators

• Soil organisms

Dr. Dharma Pitchay, Tennessee State University

Field indicators

• Root development

Dr. Abbey Wick, North Dakota State University

Field indicators

• Nutrient deficiency symptoms

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Comprehensive soil tests

• Cornell Soil Health Test

Package $50 - $140 per sample
Individual tests $15-25 per sample

http://soilhealth.cals.cornell.edu/index.html
**Comprehensive soil tests**

- Midwest Labs

$75/sample, not based on soil physical properties

**Other options**

- Soil Quality Kit NRCS

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**Now that I know what’s wrong, what do I do about it?**

- Reduce tillage
- Avoid soil compaction
- Grow cover crops
- Use better crop rotations
- Apply organic amendments
- Apply inorganic amendments

**Suggestions for grain crop farms**

- No-till
- Controlled traffic farming
- Crop rotations
- Cover crops
- Organic matter inputs

**Suggestions for crop-livestock farm**

- Perennial forage crops
- Manure for silage
- Minimum tillage
- Avoid compaction
- Prevent nutrient excesses

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**For more information**

Building Soils for Better Crops
www.sare.org

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