

SDSHC Soil Health Assessment Scorecard Rev.3

South Dakota

Soil Health Coalition

Now Available
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Apple

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Producer Name: _____

Field ID: _____

Date: _____

Soil Organic Matter Content: _____

Field Management: _____

Indicator	Least Desirable					Most Desirable					Indicator Observations		
											Declining Soil Health	Improving Soil Health	
	1	2	3	4	5	6	7	8	9	10	1	5	10
Soil Cover (tillage may affect)											Previous crop residue covers less than 50% of the soil surface throughout the	Previous crop residue covers 50-70% soil surface throughout the year	Previous crop residue covers more than 70% of the soil surface throughout the year
Biological Activity (soil moisture and temperature may affect)											No/very little earthworm or other organisms presence observed, previous crop residue deteriorates very little throughout the year without tillage, legumes have poor nodulation	Less than one earthworm per shovel full/few beneficial organisms observed, previous crop residue moderately deteriorated	Earthworm count >3 per shovelful/active presence of other organisms, previous crop residue deteriorates quickly at soil surface without tillage, legumes contain large nodules, fungi are present (identical to spider web)
Soil Disturbance (Intensity)											Conventional-till, broad area tillage involving two or more tillage trips, repeated yearly. Intense soil disturbance to a depth of 12+ inches	Minimum-till: single pass tillage, strip-till, non-consecutive yearly tillage passes. Moderate soil disturbance to a depth of 4-6 inches	No-till, minimal soil disturbance
Soil Disturbance (Duration)											Conventional-till, 5+ years, consecutively	Reduced/no-till, less than 4 years	Long-term no-till, 5+ years
Living Roots											Growing plant/living root present in the soil less than 4 months of the year	Growing plant/living roots present in the soil 4 to 6 months of the year	Growing plant/living roots present in the soil more than 6 months of the year
Crop Diversity											No crop rotation: same crop grown consecutively	Alternate between 2 separate crops yearly, some cover crops	3+ different crop rotation, extensive cover crops used
Soil Fertility Management											Anhydrous ammonia application, extensive synthetic fertilizer use	Moderate synthetic fertilizer use, some manure application applied sparingly	Biologically based fertilizer sources applied, including manure
Soil Erosion (Wind)											Airborne "dust" soil particles, visible black snow (winter)	Minimal airborne "dust" soil particles, slight dark discolored snow	No airborne particles, white colored snow in winter
Soil Erosion (Water)											Active rills and gullies present	Moderate rills and gullies present	No active signs of water erosion
Observations after rainfall event											Excessive surface water ponding for extended time after rainfall event, long-term muddy field conditions, hard, crusted soil surface when dry	Some ponding occurs after rainfall event, surface water subsides within a day, short term muddy field conditions are expected	No surface water ponding after rain event, muddy field conditions are short to non-existent
Soil Structure (0-6")											Powdery when dry, hard chocolate bar consistency after rain	Somewhat powdery, moderately hard after rain	Crumbly chocolate cake/cottage cheese like consistency
Soil Structure (6-12")											Soil structure breaks horizontal or platy, roots grow laterally	Soil has moderate platy structure, some lateral root growth	Granular or blocky structure, no root limitations
Livestock											No livestock integration	Some livestock integration, grazing pasture land or previous crop residue, no rotational grazing	Routinely rotationally grazed pasture land or cover cropped fields

Management History

1. What is the current crop rotation?

2. What are the types and frequency of tillage operations?

3. Is water management a concern at any time throughout the year?

4. Do you experience water ponding, or runoff during or immediately after rainfall events?

5. Is the field Tiled? (Circle) Yes/ No

6. Is the field irrigated? (circle) Yes/ No. What type of irrigation system?

7. Are there any weed/pest concerns? What are the current methods of control?

8. Are cover crops grown between cash crops or between perennial crop rows? (Circle) Yes/ No

9. If yes, for how many years has the field had continuously living roots?

10. How are the cover crops terminated?

11. Other notes/concerns:

How Is Healthy Soil Supposed To Function?

The function of the soil is to store and cycle water and nutrients for the growth and maintenance of plants. When we reduce the capacity of the soil to store nutrients and water by affecting one of its components we decrease soil health and therefore function.

Over time this can result in chronic issues with compaction, poor water infiltration, salinity, and lack of nutrient availability, just to name a few examples. In order to fix issues like this, an effort must be made to increase the function of the entire soil system. The five principles of soil health, listed below, include steps you can take today to begin building your soil health. Only when you have achieved 100% health can you be confident you have also reached 100% of your soils potential to function.



Scan me



Scan this QR Code to visit a supporting webpage. There you will find images and descriptions which will assist you in identifying some of the soil health indicators on the backside of this card!

The Five Principles of Soil Health

1. **Soil Cover: Keep Plant Residues on the soil surface.** Look down, what percent of your soil is protected by residue? Erosion needs to be minimized before you can start building soil health.
2. **Limited Disturbance: Minimize tillage as much as possible.** You will start building soil aggregates, pore spaces, soil biology, and organic matter.
3. **Living roots: Keep plants growing throughout the year to feed the soil.** Cover crops can add carbon to the soil, provide a great food source for micro-organisms. Start small to find the best fit for your operation.
4. **Diversity: Diversify as much as possible with 3 or more crops and cover crops whenever possible .** Try to mimic nature-cool and warm season grasses and broadleaf plants. Three or more crops in rotation benefits the soil food web, improves infiltration, nutrient cycling, reduces disease and pests, and aids in weed suppression.
5. **Integrating Livestock:** Fall/winter grazing of cover crops increases livestock's plane of nutrition at a time when pasture forage quality can be low. Grazing croplands increases the soil biological activity and improves nutrient cycling. Proper grassland management improves soil health.