

Soil Health Field Indicators Assessment Card

Indicators change with different management practices and therefore need to be determined more frequently.

1. Give a score for each indicator with 10 being best and 1 being poor.
2. For methods to evaluate the soil health indicators below, please consult Table 3 in the field guide.
3. After you complete scoring different indicators, average each major indicator (structure, soil life, soil air and water, and plant life).
4. Use these overall scores for each indicator to determine any correction in management practices recommendations below.

Indicator	Poor	Fair	Good	Rating Description	
	1-3	4-7	8-10	1-3	4-7
Soil Tillth	Structure/aggregation			Hard, lots of clods, difficulty to till	Crumbles with pressure, few clods
	Crusting			Surface seals easily after tillage and rain	Some sealing with little effect on emergence
	Compaction/bulk density			Severely restricted penetration, horizontal root growth	Somewhat restricted penetration, both horizontal and vertical roots
Overall Score					
Soil Life	Earthworm			No visible signs of casts or earthworms	Few casts, some earthworms
	Smell			No or stagnant smell	Some smell to little smell
	Residue Decomposition			Residue removed or slow decomposition	Some residue remains, minimal decomposition
Overall Score					

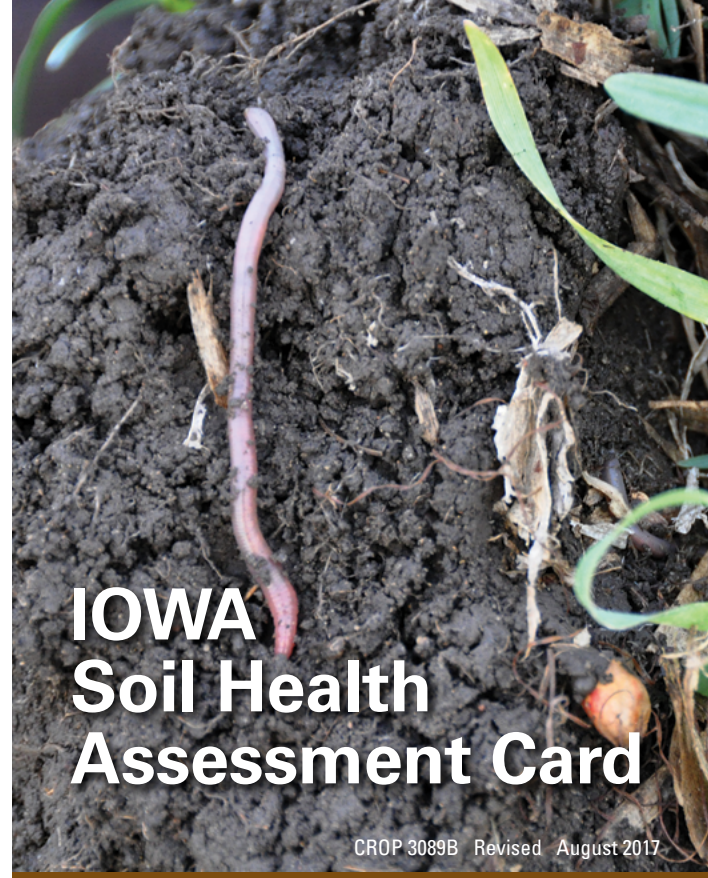
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Indicator	Poor	Fair	Good	Rating Description	
	1-3	4-7	8-10	1-3	4-7
Soil Air and Water	Infiltration			Water ponds on the soil surface	Some ponding visible
	Water Holding Capacity			Soil has limited capacity, frequent crop stress	Soil has moderate capacity, some crop stress intermittently
Overall Score					
Plant Life	Emergence			Slow uneven emergence	Inconsistent emergence
	Plant Health			Yellow, stunted growth, variable stand height and population	Variation in color, height, population
	Root Growth			Restricted roots, few fine roots	Somewhat restricted roots, some fine roots
Overall Score					

Overall Observation

Overall Soil Score and Management Practice Recommendations

Soil Health Indicator	Score	Management Practice Recommendation
Overall Soil Tillth	1-3	Use conservation practices such as no-tillage, strip-tillage, crop rotation with cover crops, apply manure, compost, reduce traffic and don't work wet soils.
	4-7	Use cover crops and animal and plant-based soil amendments such as compost/farm yard manure.
	8-10	Maintain current soil management practices.
Overall Soil Life	1-3	Avoid/minimize soil tillage, leave crop residue after harvest, cover crop, crop rotation, and apply manure and compost.
	4-7	Apply manure and compost, leave crop residue on soil surface, include cover crop.
	8-10	Avoid soil tillage; maintain current soil management practices.
Soil Air and Water	1-3	Avoid bare soil surfaces, leave crop residue on the soil surface, consider tile drainage if condition is persistent annually, add cover crop, and eliminate tillage.
	4-7	Control traffic to avoid soil compaction, consider switching to no-tillage, strip-tillage, and use cover crop.
	8-10	Maintain current soil management practice.
Plant Life	1-3	Replant if plant population is extremely low and condition allows. Apply lime, N,P,K and other crop nutrients as needed for optimal production, and pesticides for weed and disease control.
	4-7	Apply lime, N, P, K and other crop nutrients as needed for optimal crop production.
	8-10	Maintain current management practices with special attention to proper fertilizer and manure application rates.



IOWA Soil Health Assessment Card

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This card is for field assessment and evaluation of soil health indicators as part of the Iowa Soil Health Field Guide.

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Managing Soil Health—To sustain plant, animal, and human life and maintain or enhance ecosystems services

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DIRECTIONS FOR USING THE IOWA SOIL HEALTH ASSESSMENT CARD (ISHAC)

1. Divide the farm and fields into separate sections for evaluation in the same way operators would divide them for soil fertility sampling: Topography, history of tillage, crop rotation, and manure application.
2. Enter the Location, Date, Soil Type, Soil Condition, Crop Type, and Variety Hybrid information for the assessed field at the top of the ISHAC.
3. Use a shovel to get a representative soil sample from more than one spot within each portion of the field.
4. Rate each indicator on a scale from 1 to 10, with 10 being the best. Refer to the Rating Description as a guide to determine the score for each indicator. Record site-specific observations in the Notes section.
5. Review and evaluate the scoring. Follow changes in the soil health indicators over time, examine current field management practices, explore options, and consider alternatives of management changes in problem areas.
6. Consult recommended management practices for improving soil health.

INTERPRETATION OF THE IOWA SOIL HEALTH ASSESSMENT RESULTS

The rating descriptions for each indicator presented on the score card represent the worst and best soil conditions at the time of evaluation. As the ISHAC is used over time, the impact of different management systems can be documented. It is important that individual score cards for each location are kept as a record to monitor how specific soils are responding to overall soil and crop management decisions. Individuals may also consider using the NRCS Soil Health Bucket to assess the health of specific fields or soils more quantitatively. Contact a USDA-NRCS district conservationist for information on Soil Health Bucket purchase and help.

Iowa Soil Health Assessment Card

	Suggested timing for assessment of soil health indicators				
	Early Spring	Spring	Summer	Fall	After Rainfall
Structure (aggregate stability, friability)	✓	✓	✓	✓	✓
Crusting		✓			✓
Compaction	✓	✓	✓	✓	✓
Earthworm	✓	✓			✓
Smell	✓	✓			✓
Residue Decomposition	✓	✓			
Infiltration					✓
Water Holding Capacity	✓	✓	✓	✓	✓
Emergence		✓			
Plant Health		✓	✓	✓	
Root Growth		✓	✓	✓	

Date _____

Location _____ Crop Type _____ Variety/Hybrid _____

Soil Type _____ Slope _____ Corn Suitability Rating _____

Soil Condition Dry Moist Wet

Field Characteristics - Field characteristics do not change frequently and can be checked less frequently

Description – check on per category

Topography Rolling to hilly Gently rolling Flat

Color Light Moderate Dark

Soil Texture Clay Loam Sand

Drainage Poorly drained Moderately drained Well drained

Notes _____