Iowa Soil Quality Card

What is the Iowa Soil Quality Card? The Iowa Soil Quality Card (ISQC) is a tool designed to help land owners, operators, and others evaluate the current health or quality of a soil using biological, chemical, and physical indicators that reflect how well that soil is functioning when compared to its natural or inherent potential.

The ISQC is designed to monitor improvement of soil quality based on individual field experience and a working knowledge of a field specific soil resource. Regular use allows users to monitor long-term trends and changes in soil quality due to the effects of soil and crop management resources. ISQC is most effective when filled out consistently by the same person over time. It provides a qualitative assessment of soil function and evaluation ratings, but does not represent an absolute measure or value. The purpose of the evaluation is to help users improve their understanding of how management decisions influence soil function at a specific site.

Interpretation The rating descriptions for each indicator presented on the scoring card represents the worst and best soil resource conditions at the time of evaluation. As the ISQC is used over time, the impact of different management systems can be documented. Be sure to keep individual scorecards for each location to have a record of how specific soils are responding to overall soil and crop management decisions. Individuals also may want to consider using the NRCS Soil Quality Kit to assess specific fields or soils more quantitatively. Contact a USDA-NRCS district conservationist or Iowa State University Extension crop field specialists for these tools or for help with interpreting soil quality results.

Using the Iowa Soil Quality Card

1. Divide the farm and fields into separate sections for evaluation in the same way operators would divide them for soil fertility sampling: separate factors such as soil type, 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 ISQC.
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 preferable. 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 quality indicators over time, examine current field management practices, explore options, and consider alternatives of management changes in problem areas.

Suggested Timing for Assessment of Soil Quality Indicators

		GROWING SEASON			
	Early Spring	Spring	Summer	Fall	After Rainfall
Structure		✓	✓	✓	
Crusting		✓			✓
Compaction	✓	✓	✓	✓	✓
Earthworms	✓	✓			✓
Smell	✓	✓			✓
Residue Decomposition	✓	✓			
Infiltration					✓
Water Holding Capacity	✓	✓	✓	✓	✓
Emergence		✓			
Plant Health		✓	✓	✓	
Root Growth		✓	✓	✓	

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Date _____

Location_____ **Crop Type**_____ **Variety/Hybrid** _____

Soil Type _____ **Slope**_____ **Corn Suitability** _____

Soil Condition ❑ Dry ❑ Moist ❑ Wet

Field Characteristics Characteristics of the field don't change frequently and therefore can be checked less frequently.

	Description - check one per category			Notes
Topography	❑ Rolling to hilly	❑ Gently rolling	❑ Flat	_____
Color	❑ Light	❑ Moderate	❑ Dark	_____
Soil Texture	❑ Clay	❑ Loam	❑ Sand	_____
Drainage	❑ Poorly drained	❑ Moderately drained	❑ Well drained	_____

Indicators Indicators change with the use of different mangement practices and therefore need to be determined more frequently. Give a score for each indicator with **10** being preferred and **1** being poor.

Indicators	Poor 1 – 3	Fair 4 – 7	Good 8 – 10	Observations	Rating Description 1-3	4-7	8-10
Soil Tilth							
Structure					Hard, lots of clods, tills difficultly	Crumbles with pressure, few clods	Crumbles easily, mellow, easy to till
Crusting					Surface seals easily after tillage and rain	Some sealing with little effect on emergence	Open, porous soil surface throughout growing season
Compaction					Severly restricted penetration, horizontal root growth	Somewhat restricted penetration, both horizontal and vertical roots	Unrestricted penetration, vertical root growth
Soil Life							
Earthworms					No visible signs of casts or earthworms	Few casts, some earthworms	Many casts, lots of earthworms
Smell					No or stagnant smell	Some to little smell	Pungent, fresh, sweet 'earthy' smell
Residue and Decomposition					Residue removed or slow decomposition	Some residue remains minimal decomposition	Residue left intact and at various stages of decomposition
Soil Air and Water							
Infiltration					Water ponds on the soil surface	Some ponding visible	No ponding
Water Holding Capacity					Soil has limited capacity, frequent crop stress	Soil has moderate capacity, some crop stress intermittently	Soil holds water well, deep in the topsoil, little crop stress
Plant Life							
Emergence					Slow, uneven emergence	Inconsistent emergence	Rapid, even emergence
Plant Health					Yellow, stunted growth, variable stand height and population	Variation in color, height, population	Dark green, vibrant growth, even stand
Root Growth					Restricted roots, few fine roots	Somewhat restricted roots, some fine roots	Healthy, uninhibited roots, lots of fine roots

Overall observations _____

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