

Cedar County Soil Survey Report Supplement¹

This supplement contains corn suitability ratings (CSR) which are not found in the report.

Corn suitability ratings provide a relative ranking of all soils mapped in the State of Iowa based on their potential to be utilized for intensive row crop production. The CSR is an index that can be used to rate one soil's potential yield production against another over a period of time. The CSR index accounts for climatological conditions as well as intensity and frequency of row crop management systems for each soil unit. Ratings range from 100 for soils that have no physical limitations, occur on minimal slopes and can be continuously row cropped to as low as 5 for soils with severe limitations for row crops. The highest CSR index in Cedar County is 100. The CSR value assumes a) adequate management, b) natural weather conditions (no irrigation), c) artificial drainage where required, d) soils lower on the landscape are not affected by frequent floods and e) no land leveling or terracing. The CSR for a given field can be modified by sandy spots, rock outcroppings, field boundaries, etc. Even though predicted average yields (Table 4, pp. 108-109) may change with time, the CSR's are expected to remain relatively constant in relation to one another. The CSR can be useful to farmers, land buyers, and assessors and others in determining land use and land value. The CSR's assigned for individual tracts of land by the Cedar County Assessor may differ from those listed in the accompanying table. These differences are due to adjustments for waterways and correlation of some soil mapping units which were identified in the Cedar County Advance Soil Survey Report.

Subsoil nutrient levels. Inherent subsoil fertility levels in terms of potential plant available phosphorus and potassium are described for each soil mapping unit in Cedar County (pp. 12-54). The qualitative ratings of available phosphorus and potassium assigned to each soil mapping unit are for the following depths in the soil profile: phosphorus, 30 to 42 inches, and potassium, 12 to 24 inches.

Soil tests of the plow layer are used to determine the most profitable rates of fertilizers for various crops. Nutrient levels in the subsurface layers do influence crop yields, particularly in drier seasons when the nutrients in the dry plow layer become temporarily unavailable to plants. The availability of nutrients in the plow layer and subsoil influences the relative uptake from the two zones in the soil profile. In Iowa, fertilizer recommendations based on soil tests of the plow layer may be adjusted by the average nutrient levels in the subsoil of each soil series. The potential plant available subsoil phosphorus and potassium classes are described as follows:

¹Prepared by Gerald A. Miller, Extension Agronomist, Thomas E. Fenton, Professor of Soils, and L. Gregory Brenneman, Extension Soil, Water, and Waste Management Specialist, Iowa State University; John D. Highland, Soil Specialist, and Edward J. Schermerhorn, Party Leader, Soil Conservation Service. CSR values were taken from information provided the Cedar County Assessor by the Iowa Cooperative Soil Survey Staff.

Subsoil phosphorus (P). The base for the subsoil phosphorus level in soil test recommendations from the Iowa State University Soil Testing Laboratory are:

<u>Soil Test Class</u>	<u>Soil Test Value, Lbs/A</u>
Very low (VL)	Less than 15
Low (L)	15 to 25
Medium (M)	26 to 45
High (H)	Greater than 45

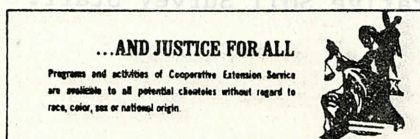
Subsoil potassium (K). The base for subsoil potassium level in soil test recommendations from the Iowa State University Soil Testing Laboratory are:

<u>Soil Test Class</u>	<u>Soil Test Value, Lbs/A</u>
Very low minus (VL-)	Less than 40
Very low plus (VL+)	40 to 79
Low (L)	80 to 125
Medium (M)	126 to 200
High (H)	201 to 300
Very high (VH)	Greater than 300

Subsoil nutrient levels. Inherent subsoil fertility levels in terms of potential plant available phosphorus and potassium are described for each soil mapping unit in Cedar County (pp. 12-24). The qualitative ratings of available phosphorus and potassium assigned to each soil mapping unit are for the following depths in the soil profile: phosphorus, 30 to 42 inches, and potassium, 12 to 24 inches.

Soil tests of the plow layer are used to determine the most profitable rates of fertilizers for various crops. Nutrient levels in the subsoil layers do influence crop yields, particularly in drier seasons when the nutrients in the dry plow layer become temporarily unavailable to plants. The availability of nutrients in the plow layer and subsoil influences the relative uptake from the two zones in the soil profile. In Iowa, fertilizer recommendations based on soil tests of the plow layer may be adjusted by the average nutrient levels in the subsoil of each soil series. The potential plant available subsoil phosphorus and potassium classes are described as follows:

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Soil No.	Soil Mapping Unit Name	Corn Suitability Rating	
		Improved	Unimproved
8B	Judson silt loam, 2 to 5 percent slopes	90	
11B	Colo-Ely complex, 2 to 5 percent slopes	70	35
41B	Sparta loamy fine sand, 1 to 5 percent slopes	42	
41C	Sparta loamy fine sand, 5 to 9 percent slopes	26	
41E	Sparta loamy fine sand, 9 to 18 percent slopes	5	
63B	Chelsea loamy fine sand, 2 to 5 percent slopes	40	
63C	Chelsea loamy fine sand, 5 to 9 percent slopes	21	
63E	Chelsea loamy fine sand, 9 to 20 percent slopes	5	
65D2	Lindley loam 9 to 14 percent slopes, moderately eroded	38	
65E2	Lindley loam, 14 to 18 percent slopes, moderately eroded	24	
65F2	Lindley loam, 18 to 25 percent slopes, moderately eroded	8	
83B	Kenyon loam, 2 to 5 percent slopes	87	
83C	Kenyon loam, 5 to 9 percent slopes	72	
83C2	Kenyon loam, 5 to 9 percent slopes, moderately eroded	69	
88	Nevin silty clay loam, 0 to 2 percent slopes	92	
110C	Lamont fine sandy loam, 2 to 9 percent slopes	44	
110E	Lamont fine sandy loam, 9 to 18 percent slopes	17	
118	garwin silty clay loam, 0 to 2 percent slopes	95	
119	Muscatine silt loam, 0 to 2 percent slopes	100	
119B	Muscatine silt loam, 2 to 5 percent slopes	95	
120	Tama silt loam, 0 to 2 percent slopes	100	
120B	Tama silt loam, 2 to 5 percent slopes	95	
120C	Tama silt loam, 5 to 9 percent slopes	80	
120C2	Tama silt loam, 5 to 9 percent slopes, moderately eroded	78	
120D2	Tama silt loam, 9 to 14 percent slopes, moderately eroded	68	
121	Tama Variant silt loam, 1 to 3 percent slopes	95	
122	Sperry silt loam, 0 to 1 percent slopes	63	32
133	Colo silty clay loam, 0 to 2 percent slopes	80	40
133+	Colo silt loam, overwash, 0 to 2 percent slopes	85	43
143	Brady sandy loam, 0 to 2 percent slopes	60	
160	Walford silt loam, 0 to 1 percent slopes	67	
162B	Downs silt loam, 2 to 5 percent slopes	90	
162C	Downs silt loam, 5 to 9 percent slopes	75	
162C2	Downs silt loam, 5 to 9 percent slopes, moderately eroded	73	
162D2	Downs silt loam, 9 to 14 percent slopes, moderately eroded	63	
163B	Fayette silt loam, 2 to 5 percent slopes	85	
163C	Fayette silt loam, 5 to 9 percent slopes	70	

Soil No.	Soil Mapping Unit Name	Corn Suitability Rating	
		Improved	Unimproved
163C2	Fayette silt loam, 5 to 9 percent slopes, moderately eroded	68	
163D	Fayette silt loam, 9 to 14 percent slopes	60	
163D2	Fayette silt loam, 9 to 14 percent slopes, moderately eroded	58	
163D3	Fayette silty clay loam, 9 to 14 percent slopes, severely eroded	56	
163E	Fayette silt loam, 14 to 18 percent slopes	50	
163E3	Fayette silty clay loam, 14 to 18 percent slopes, severely eroded	46	
163F	Fayette silt loam, 18 to 25 percent slopes	30	
163F2	Fayette silt loam, 18 to 25 percent slopes, moderately eroded	27	
163G	Fayette silt loam, 25 to 40 percent slopes	19	
171B	Bassett loam, 2 to 5 percent slopes	82	
171C2	Bassett loam, 5 to 9 percent slopes, moderately eroded	64	
171D2	Bassett loam, 9 to 14 percent slopes, moderately eroded	53	
175B	Dickinson fine sandy loam, 1 to 5 percent slopes	56	
175C	Dickinson fine sandy loam, 5 to 9 percent slopes	41	
177	Saude loam, 1 to 3 percent slopes	64	
184	Klinger silt loam, 1 to 3 percent slopes	93	
212	Kennebec silt loam, 0 to 2 percent slopes	94	47
214D	Rockton loam, 20 to 30 inches to limestone, 5 to 14 percent slopes	13	
220	Nodaway silt loam, 0 to 2 percent slopes	85	43
221	Palms muck, 1 to 3 percent slopes	45	22
291	Atterberry silt loam, 0 to 2 percent slopes	90	
291B	Atterberry silt loam, 2 to 5 percent slopes	85	
293C	Chelsea-Lamont-Fayette complex, 5 to 9 percent slopes	39	
293E	Chelsea-Lamont-Fayette complex, 9 to 18 percent slopes	20	
293F	Chelsea-Lamont-Fayette complex, 18 to 40 percent slopes	8	
315	Loamy alluvial land-Spillville complex, 0 to 2 percent slopes	20	
320	Arenzville silt loam, 0 to 2 percent slopes	83	41
350B	Waukegan silt loam, 2 to 5 percent slopes	69	
350C	Waukegan silt loam, 5 to 9 percent slopes	47	
352B	Whittier silt loam, 2 to 5 percent slopes	62	
352C2	Whittier silt loam, 5 to 9 percent slopes, moderately eroded	40	
354	Marsh	--	5
377B	Dinsdale silt loam, 2 to 5 percent slopes	90	
377C	Dinsdale silt loam, 5 to 9 percent slopes	75	
377C2	Dinsdale silt loam, 5 to 9 percent slopes, moderately eroded	73	
382	Maxfield silty clay loam, 0 to 2 percent slopes	90	

Soil No.	Soil Mapping Unit Name	Corn Suitability Rating	
		Improved	Unimproved
412E	Sogn loam, 9 to 18 percent slopes	5	
420B	Tama silt loam, benches, 2 to 5 percent slopes	94	
428B	Ely silt loam, 2 to 5 percent slopes	93	
442C	Dickinson-Tama complex, 4 to 10 percent slopes	55	
462B	Downs silt loam, benches, 2 to 5 percent slopes	85	
463B	Fayette silt loam, benches, 2 to 5 percent slopes	85	
467	Radford silt loam, 0 to 2 percent slopes	85	42
478G	Rock outcrop-Sogn complex, 25 to 60 percent slopes	5	
485	Spillville loam, 0 to 2 percent slopes	92	46
536	Hanlon fine sandy loam, 0 to 2 percent slopes	70	
729B	Nodaway-Arenzville silt loams, 2 to 5 percent slopes	66	
760	Ansgar silt loam, 0 to 2 percent slopes	80	
761	Franklin silt loam, 1 to 3 percent slopes	83	
771B	Waubee silt loam, 2 to 5 percent slopes	87	
933	Sawmill silty clay loam, 0 to 2 percent slopes	80	40
977	Richwood silt loam, 0 to 2 percent slopes	95	
1119	Muscatine silt loam, benches, 0 to 2 percent slopes	100	
1133	Colo silty clay loam, channeled, 0 to 2 percent slopes	--	25
1160	Walford silt loam, benches, 0 to 1 percent slopes	63	
1220	Nodaway silt loam, channeled, 0 to 2 percent slopes	--	25
1291	Atterberry silt loam, benches, 0 to 2 percent slopes	85	