Soybean Iron Deficiency Chlorosis (IDC)

Soils with high carbonate content and salinity are more likely to develop iron deficiency chlorosis (IDC) in soybean. Soil testing for carbonate and salinity helps evaluate the risk potential for soybean IDC development. Always choose fields with lowest carbonate and salinity for sobyean. In management zones where carbonate and salinity are high, plant an IDC-tolerant soybean variety; this may increase the overall field average yield. Other crops sensitive to IDC are flax and dry bean if carbonate and salinity are high.

Fields with low carbonate and low salinity have low risk potential for soybean IDC development. Fields with high carbonate and high salinity have much higher risk potential for soybean IDC development and symptoms may be severe. All soils with pH > 7.3 should have carbonate (calcium carbonate equivalent, CCE) and salinity determined. Soils with high pH may widely different CCE content, ranging from near zero to over 20%. Soil carbonate content must be determined to assess soybean IDC risk potential.

Carbonate and Salinity Interpretation for Soybean IDC

Calcium carbonate		Soybean IDC
equivalent (CCE)	Salinity	risk potential
%	dS/m	
0 - 2.5	< 0.5	Low
0 - 2.5	0.5 - 1.0	Moderate
0 - 2.5	> 1.0	Very High
2.6 - 5.0	0 - 0.25	Low
2.6 - 5.0	0.26 - 0.50	Moderate
2.6 - 5.0	0.51 - 1.0	High
2.6 - 5.0	> 1.0	Very High
> 5.0	0 - 0.25	Moderate
> 5.0	0.26 - 0.50	High
> 5.0	0.51 - 1.0	Very High
> 5.0	> 1.0	Extreme

- * Low: Soybean IDC is not likely based on carbonate content and salinity.
- * **Moderate:** Soybean IDC may develop in certain field areas if cool, wet conditions are present, based on carbonate content and salinity. Choose an IDC-tolerant soybean variety.
- * **High:** Soybean IDC is likely to develop in certain field areas if cool, wet conditions are present, based on carbonate content and salinity. Choose an IDC-tolerant soybean variety.
- * **Very High:** Soybean IDC may be severe if cool, wet conditions are present, based on carbonate content and salinity. Choose an IDC-tolerant soybean variety, strongly advised.
- * Extreme: Soybean IDC maybe be severe if cool, wet conditions are present, based on carbonate content and salinity. Soybean IDC severity may reduce yield significantly. Soybean is not recommend on this field.