

Soybean Iron Chlorosis

IDC: Iron Deficiency Chlorosis

University research has shown that soils with a high level of carbonate and soluble salts are much more likely to develop severe iron chlorosis in soybeans. Testing your fields for the level of carbonate and soluble salts will assist you in making management decisions. Always choose fields with lowest carbonate and salt levels to plant soybeans. If areas of a field are high in carbonate and salt, planting a variety tolerant to IDC in those areas may result in a higher overall yield for the entire field. IDC symptoms in crops such as flax and edible beans may also be more severe if the soil has a high level of carbonate and soluble salts.

Fields with a low level of carbonate and a low level of salts have a low risk of developing IDC symptoms. Fields that test high in carbonates (CCE, calcium carbonate equivalent) and high in soluble salts have a higher risk of developing IDC symptoms and may be severe. All soils that have a pH > 7.3 should be tested for CCE and salts to determine the actual level in the soil. For example, 2 soils with the same pH of 7.5 may have very different CCE values, one may have zero and one may have up to 20%. The table below provides guidelines for interpreting the risk of developing IDC in soybeans at various CCE and salt levels.

Carbonate and Soluble Salt Interpretations (for conventionally sampled fields):

CCE Level (%)	Salt Level (mmhos./cm)	IDC Severity Risk* (Relative Risk)
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:** IDC is not likely in this field based upon the CCE and Salt level.
- * **Moderate:** IDC may develop in some areas of this field in wet, cool conditions based upon CCE and Salt levels. Plant an IDC resistant soybean variety.
- * **High:** IDC is likely to develop in some areas of this field under wet, cool conditions based upon CCE and Salt levels. Plant an IDC resistant soybean variety.
- * **Very High:** IDC may be severe in this field under wet, cool conditions based upon CCE and Salt levels. Planting an IDC resistant soybean variety is strongly advised.
- * **Extreme:** IDC may be severe in this field under wet, cool conditions based upon CCE and Salt levels. IDC may likely reduce yields severely. Soybeans are not recommended on this field.