

PRESCRIPTIVE TREATMENT FOR YIELD ROBBING IDC



Do your soybeans suffer from iron deficiency chlorosis (IDC)? This is a common problem in low areas within a field where soil bicarbonate content and soil pH are typically high. You likely have those areas GPS mapped after observing yellow stunted soybeans and reduced yield for several years. It is rare for IDC to affect an entire field; however, severely infected areas within a field may experience a 20% to 30% loss in yield potential.¹

MicroSync® IRON IDC is specifically designed to address IDC in crops. When applied with SIMPAS® application system, using your GPS map with a history of IDC, you prescriptively treat only those acres of need, not the entire field.

KEY FEATURES

- Contains a high percentage of ortho-ortho EDDHA chelated iron, a form readily available for plant uptake in calcareous soils.
- Excellent seed and seedling safety allows in-furrow placement that optimizes plant response.
- Delivers zinc and sulfur, micronutrients that are frequently limited in soil.
- Comprised of homogeneous granules formed from compaction of small nutrient particles together into a low dust nugget.
- Soil moisture collapses granules, releasing nutrients for plant root uptake.
- Application rate and granule size provide spacing to optimize root contact with nutrients.



RECOMMENDATION

Apply **MicroSync IRON IDC** in-furrow at planting, utilizing the rate specified below for typical IDC severity in the area to be treated.² The nutrients provided by each rate are also provided.

IDC severity	MicroSync IRON IDC Rate	EDDHA Chelated Iron	Total Iron	Total Zinc	Total Sulfur
	pounds/acre				
Mild	5	0.08	0.13	0.05	0.2
Moderate	7.5	0.12	0.19	0.075	0.3
Severe	10	0.155	0.25	0.1	0.4

¹Arp A. 2014. Iron chlorosis continues to cause problems for Iowa soybean farmers. Iowa Soybean Association On-Farm Network.

²MicroSync IRON IDC can be used in combination with soybean varieties having moderate or high IDC tolerance to further optimize soybean tolerance in severe IDC situations.

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MANAGING SOYBEAN IRON DEFICIENCY CHLOROSIS

Iron deficiency chlorosis (IDC) in soybean is due to a plant's inability to utilize iron in the soil. The amount of iron in the soil is generally ample to support plant growth. In low areas in a field where ponding is common, over time soils develop high bicarbonate levels near the surface, resulting in high pH – typically 7.4 or greater. In this environment, the soybean plant is unable to solubilize the iron in the soil due to the neutralizing effect of the calcium carbonate on the soybean's root excreted acid. Despite having ample soil iron content, IDC susceptible soybean plants will develop yellow chlorotic leaves due to the inability to absorb iron needed for green chlorophyll production in leaves.

Soybean seedling uptake of carryover nitrate nitrogen in soil will exacerbate IDC symptoms. Planting cereal cover crops prior to soybean seeding has proven effective to reduce soil nitrates and reduce IDC symptoms. Timely spring cereal termination is required to maximize nitrate uptake and minimize competition with soybean seedlings.



Symptoms of IDC appear on the upper leaves of the plant. Leaf chlorosis (yellow tissue) occurs between veins while veins remain green. Symptoms will vary from yellow leaves to stunted or dead plants across a field.



University research has demonstrated that at-plant applications of an iron fertilizer such as ortho-ortho EDDHA chelated iron, in contact with soybean seed will help overcome chlorosis. This chelate is highly soluble and available for soybean root uptake longer than other chelates, such as EDTA, in calcareous soils associated with IDC situations.

Options for managing soybean IDC:

- Soybean variety selection – plant varieties with moderate to high tolerance to IDC.
- Apply ortho-ortho iron fertilizer at planting in IDC problem areas when planting IDC sensitive soybean varieties or in severe IDC areas along with tolerant varieties.
- Reduce carryover soil nitrate content – fall or spring planting of cereal cover crops such as wheat, rye or oat. The cover crop will require spring termination at 10-inch height for optimum results.