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Dissecting decades of research in soybean iron deficiency

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A soybean plant showing severe iron deficiency symptoms. Photo by Aaron Lorenz.

Iron is a plant micronutrient that, when in short supply, causes macro reductions in yield for soybean. Despite decades of breeding efforts and research, resistance to iron deficiency remains a major challenge in cultivar development for this crop. Many loci conferring resistance to iron deficiency in soybean have been discovered; however, the genes behind those loci are largely unknown.

A recent comprehensive review in *Crop Science* condensed the multitude of research on soybean iron deficiency and bridged knowledge gaps between disciplines. The researchers set out to synthesize what is known in iron deficiency genetics to make connections with the environment in which iron deficiency occurs and how iron is mobilized and utilized throughout the plant. That turns out to be a complicated endeavor, encountering everything from microbes and fungi to sequestering iron in the seed for the next generation. However, identifying as many areas of research as possible is important to get a holistic view of iron physiology in soybean.

This review is a resource for scientists to comprehend soybean iron physiology more fully and thus be better able to discover genes conferring resistance to iron deficiency and improve future breeding efforts.

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Merry, R., Dobbels, A.A., Sadok, W., Naeve, S., Stupar, R.M., & Lorenz, A.J. (2021). Iron deficiency in soybean. *Crop Science*. <https://doi.org/10.1002/csc2.20661>

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