

Q&A

Yellow grass



We are experiencing yellow grass along our chain link baseball fence and also on the baseball outfield where we have painted soccer field lines for several years. What's with the yellow grass?

Steve McCarthy, Grounds Supervisor, Breck School, Golden Valley, MN

Iron chlorosis is a common problem on high pH soils in the semi-arid western states and it is seldom observed in Minnesota; however, the Midwest experiences varying degrees of yellow grass each year from late July through early September. Dave Devetter tackled this problem for his MS degree in 2007 and here is what we now know.

We now call this summer-induced iron chlorosis. It only occurs in late summer just before plants normally recover in early fall. We notice it mostly in Kentucky bluegrass and to a lesser extent in perennial ryegrass and tall fescue. The youngest leaves located in the center of the grass plant seem to yellow the most with the older or outer leaves showing less yellowing. The yellowing usually starts in July and progresses as temperature and

plant stress accumulates through August. Under sever conditions some leaf tissue will turn white.

Summer induced chlorosis has been reported when turfgrass root-zone temperature exceeds 93°F. Below 86°F chlorosis did not occur. Declining temperatures at the beginning of September almost always makes this problem simply and suddenly go away over a 2-week period. Chelated iron fertilizers can restore the normal green color to turf, however it was interesting to note that iron fertilizer applications performed best at the height of the summer induced iron chlorosis season. Preventative application of iron fertilizer, before or at the onset of chlorotic symptoms, did not reduce iron chlorosis.

Scott McCarthy puts an interesting twist on this yellow grass phenomenon with his pictures of yellow grass near a chain link fence and on top of painted lines in Minnesota. The timing (late summer), individual plant symptoms (youngest leaves first), progressive nature (keeps getting worse from the first day it is noticed), and rapid disappearance (it goes away each year in the fall and returns at the end of the summer) all fit with

what we have come to know as summer induced iron chlorosis.

The influence by the fence and paint lines is not completely understood but after talking with a few of my colleagues here is what could be happening. Along the fence there may be other metal ions that are competing or antagonizing iron uptake by the plant. The painted lines (not limed lines) may be rich in calcium that is also competing with iron. If you have another idea, let me know.

Just for comparison I included the last picture where old football field lines in western Nebraska were repeatedly limed over many years; this is clearly a high pH situation showing lime induced iron chlorosis.

In my experience, summer induced iron chlorosis seldom kills grass and the unusual lime green color will simply go away with cooling autumn temperatures. If you don't like the yellow grass then green it with some iron. It's been a long summer and I've seen grass of every dead color you can imagine. Finish your aerifying, Scott, and let's go tip over a couple of 5-gallon buckets and then sit on the ice to contemplate yellow perch instead of yellow grass. ■



Left: Yellow turf caused by summer induced iron chlorosis with the most severe yellowing occurring near the galvanized chain link fence. A possible explanation could be competition or antagonism between iron and other metal ions. Photo credit Steve McCarthy. **Middle:** Yellow turf caused by summer induced iron chlorosis with the most severe yellowing occurring where painted lines occurred. A possible explanation could be the high calcium carbonate content of the paint caused roots to grow in a high pH environment that interferes with iron uptake. Photo credit Steve McCarthy. **Right:** High pH induced iron chlorosis caused by several years of marking football field lines with lime in western Nebraska. Photo credit Dave Minner.

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