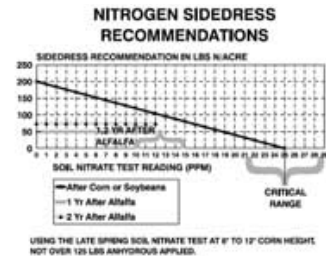


Nitrogen

Nitrogen rate trials, always the mainstay of PFI on-farm research, were more severely affected by the rainy weather of 1993 than any other kind of experiment. In both 1991 and 1992, cooperators carried out nine replicated trials of N rates in corn. In 1993 the number dropped to two. The rain kept cultivators out of the field, so it was not possible to sidedress different rates of N. If the cultivator or other nitrogen applicator was eventually used, the corn crop was past the 6-12-inch stage at which the late spring soil nitrate test could be taken.

Figure 3. Sidedress recommendations for the late spring soil nitrate test. Using the late spring soil nitrate test at 6" to 12" corn height. Not over 125 LBS Anhydrous applied.



1993 was not a year for precision applications. Many producers applied what they could, when they could. Those who did not have to rely on sidedressing to supply all of the crop's nitrogen were in a better position. Yellow corn plants reflected not just nitrogen stress but multiple environmental assaults. By mid-summer, it was evident that sidedressing could hardly be justified in some fields.

Ironically, 1993 was also the year a revised ISU bulletin for the late spring test was released (Pm-1521). PFI members received this bulletin "hot off the press" with the spring newsletter. Figure 3 shows graphically the new guidelines. Instead of a recommendation range, producers now have a simpler, one-number recommendation. The notable change is the separate guidelines for corn following one or two years after a stand of alfalfa that was established two or more years. For these fields, the critical range comes down to 10-15 parts-per-million (ppm) nitrate-N ([See table 2](#)).

Perhaps surprisingly, the two trials on record do not argue for high nitrogen rates. In both, the lower rate was the more profitable. This was true even in Ted and Donna Bauer's trial, in which yield was significantly higher (3.5 bushels) at the higher N rate. That yield increase did not justify the cost of the additional 32-percent nitrogen solution.