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## TRACKING NITROGEN USE EFFICIENCY ON YOUR FARM: TIPS FOR TRIUMPH

**If you were asked how good your N management (source, rate, timing, and place of application) was for the crop(s) on each of your fields this past year, how would you answer?** Was N managed at the optimum, most economically rewarding rate? Unless on-farm replicated N management comparisons were made, it would probably just be a guessing game for most of us.

**The effectiveness of a given N management program, and the efficiency with which the crop utilizes the applied N, will vary greatly with weather conditions, year in and year out.** To try to be as efficient as possible, most farmers use local university research results to guide their initial management decisions, but make modifications based on their own field observations and experiences.

**Unless we actively monitor the crop's N status during the growing season, we never really know how well nourished the crop is or was until harvest time.** End-of-season crop assessments and documentation of yields on each field, in and of themselves, can provide important feedback on past decisions and help to influence future N management directions. But such measures are merely looks in the rear-view mirror.

**Yet, the importance of those "after-the-fact" looks in the rear-view mirror should not be downplayed.** When crop yield is evaluated per unit of N applied (e.g. bushels, hundred weight, tons, or bales per pound of N applied per acre), and those values are tracked for each field each year, over a period of years, a great deal can be learned. There are other ways to measure crop N use efficiency, but these calculated values serve as perhaps the most practical field-level measure of N use efficiency. An upward trend in the calculated values over time implies that N use efficiency may be improving. If the trend in values of yield per unit of applied N is flat or declining over time, then closer scrutiny of the N management program, and possibly a detailed assessment of the entire crop management system, is called for.

**To begin moving your N management program toward greater effectiveness and efficiency, and to help improve your bottom line while protecting the environment from controllable N losses, start with some simple calculations for each field on your farm.** Divide crop yield by the applied N rate, and plot the values for each year, on each field. The results may reveal your prowess as a top-notch N manager ... or they could serve as important indicators of the need for a N management tune-up. Either way, tracking N use efficiency for each field can be just as important as monitoring the milking performance of a dairy cow. Without performance records, it is difficult to make critical management decisions that are essential to remaining competitive in the farming business.

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Abbreviation: N = nitrogen.