

## Case Study

### SoilBuilder Reduces Nitrate Leaching

Advanced Microbial Solutions (AMS) conducted a multi-year study to evaluate the ability of SoilBuilder to increase corn yields by converting fertilizer nitrogen (N) into a less leachable form with improved crop uptake.

The studies were conducted using lysimeters at the field research facilities of Arise Research & Discovery, Inc., Martinsville, IL. Each lysimeter plot (10' x 30') was seeded with field corn (Tristler T7N88CB) at a rate equivalent to 30,000 seeds/acre with four rows spaced at 30 inches. The four lysimeter treatments for each of the three years consisted of a standard N (163 lbs. N/acre) and reduced N (145, 154 or 130 lbs. N/acre) application rate, with or without SoilBuilder applied at 1 gallon/acre with UAN-28 at planting. An additional UAN-28 sidedress was applied, without SoilBuilder, 2 – 4 weeks after planting. Water leaching through the soil profile of each lysimeter was captured by a drain tile at a depth of 42" and deposited into a lysimeter well at the end of each plot. Prior to pumping the lysimeter wells, four water samples were collected at various depths and analyzed for nitrate concentration.

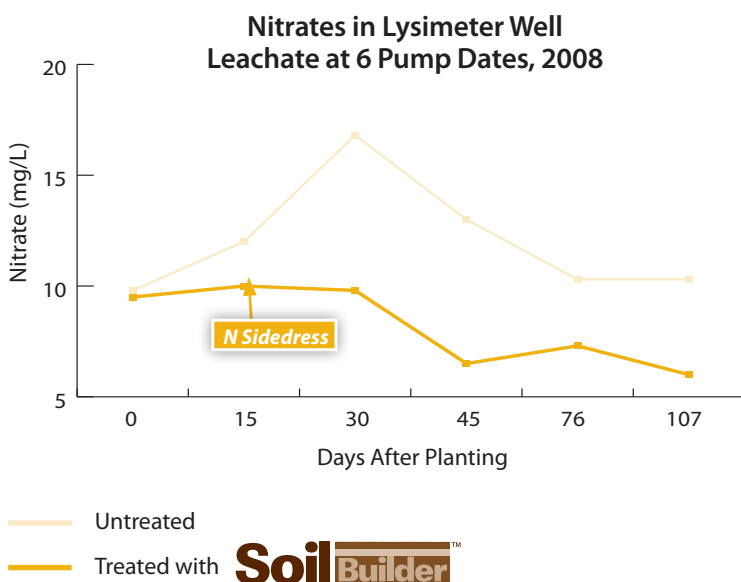
In each of the three seasons, SoilBuilder increased yields over the control treatment (Table 1). In addition, there were significant reductions in the amount of nitrates leaching through the soil profile in the SoilBuilder treatments compared to the controls (Table 2). Figure 1 graphs the average rate of nitrate leaching during the 2008 growing season as influenced by the presence or absence of SoilBuilder.

SoilBuilder improves fertilizer use efficiency by reducing nitrate leaching and increasing nitrogen uptake by the crop. This translates to increased yield and income for the grower.

### Arise Research & Discovery - Illinois

Field Corn Lysimeter Trials, 2008 – 2010

Figure 1



### Three Yield Data (Bu/A)

Table 1

	Control	SoilBuilder	Diff
2008	150.3	159.3	+9.0
2009	147.5	155.6	+8.1
2010	137.3	149.6	+12.3

### Average Nitrates Leached (ppm)

Table 2

	Control	SoilBuilder	Diff
2008	12.0	8.2	31.7%
2009	12.6	7.9	37.3%
2010	12.0	8.0	33.3%

\* Average of six lysimeter pumping dates.