

# Test before cutting rates

By TOM J. BECHMAN

**T**HE standoff between farmers and retailers still rages.

In the December issue of *Indiana Prairie Farmer*, Kerry Graves, Greene County, sized up the situation statewide when he noted that farmers just didn't apply much fertilizer last fall. Now retailers are bracing for two seasons of work in one. But the \$64,000 question remains: Will farmers apply phosphate, potash and lime — or will they let fields ride and hope for lower fertilizer prices next time? Only time will tell.

Danny Greene of Greene Crop Consulting, Franklin, has already seen signs that farmers

### Key Points

- Fertilizer applications deferred now must be made up later.
- Soil sampling by soil type is one option to consider.
- Put dollars toward the nutrient or product most needed now.

want to minimize fertilizer expenses this year. That doesn't mean they aren't paying attention to soil fertility. There's a teachable moment for everything, he notes, and this year it's easy to convince someone who hasn't soil tested regularly why it pays.

What Greene sees amongst the farmers he serves is that everyone is looking for a tailored

program today. "I haven't yet seen a one-size-fits-all recommendation that is economical to the farmer, at least not since prices rose so sharply," he says.

"Right now, many farmers want [fertilizer rates] shaved close, but without cutting into yield. Recommendations that meet the farmers' goals need to be made with the understanding of their risk tolerance and target fertilizer budget.

"I like to let them know that I will try to meet their fertilizer budget where possible this year. But [I add] that they might need to bump the program back up when economics are more positive."

Whether or not to apply lime and/or fertilizer is a case-by-case decision this spring, he adds. Here's an example illustrating why decisions need to be field by field, even soil type by soil type. It's based on a real farm.

### Set up sampling areas

The first thing Greene does is set up sampling areas within a field. He utilizes GPS to mark field boundaries, then relies heavily on county soil survey data that illustrates soil types. In many situations, especially where there's lots of variation, he prefers to sample by soil type. Greene also takes past history of how various fields were handled into account.

Note how the soil sampling areas, labeled 1A through 1C, 2A through 2E and 3A through 3G, roughly correspond with differences in soil types. The soils in these three fields vary



**SOIL SAMPLING MATTERS:** Pulling cores to the same depth helps ensure accurate results.

from sandy soils, primarily in fields 2 and 3, to rolling, eroded timber soils in field 1 and the lower parts of fields 2 and 3. "That much soil variation in this one farm really makes the case for sampling by soil type," Greene adds.

### Consider pH levels

Note that the biggest variation in pH is on field 1. The pH values vary a full point, from 6.3 to 5.3. Such a large swing causes lime recommendations to vary.

This field makes the case for variable-rate applications. With lime costing up to \$25 per ton applied, a 1-ton difference per acre adds up. If 10 acres within a field don't need lime, that's \$250 in savings off the top.

"We discuss more than just recommended application rate when it comes to lime," Greene adds. "The right lime source is important. Lime varies considerably in calcium and magnesium content. It also varies in grind size. Whenever possible, I

like to make recommendations for lime application rates based upon the specific lime source that will be used on that farm."

### Examine P levels

"Phosphorus levels are generally very high on this farm," Greene notes. That's not surprising since the farm was once a livestock farm with a feedlot on the property. Field 2 was often used for silage, and manure was spread there often. These are the pieces of information a soils consultant needs to help understand variations in test results.

Greene didn't recommend phosphate be applied on this farm this year.

"There are a couple of [sampling] zones where I would normally recommend some phosphate, but I didn't think the money and time spent for those two zones would result in enough extra yield to compensate the farmer for his time and trouble this year.

"Other than for starter fertilizer, this is a year where a farmer with this situation could save some money on his phosphorus fertility program," he explains.

### Potassium results

Field 3 was often a hay field in the past. Hay crops remove lots of potassium. Removing hay over the years didn't impact soil pH or phosphorus levels as much as it did potassium.

In this situation, Greene determined that between P and K, the farmer needed to apply potash using variable-rate technology. Since the farmer strip-tills with a hopper that holds one product, the natural thing to do was apply potash.

"Potassium needs aren't in proportion to phosphorus needs on this farm," he notes. "Remember, though, that recommendations could still change before planting as [fertilizer and crop] prices change."

### Soil test results for example farm

Field ID	Sample ID	Acres	Organic matter	pH	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
1	A	5.8	1.6	6.3	224	386
1	B	4.4	1.5	5.6	261	410
1	C	3.1	1.8	5.3	499	378
2	A	11.1	1.5	5.7	234	370
2	B	6.5	1.4	6.6	256	414
2	C	3.9	1.6	6.5	321	416
2	D	6.8	1.8	6.4	518	408
2	E	6.8	1.6	6.4	550	404
3	A	4.5	1.9	5.9	160	182
3	B	4.5	1.9	5.8	165	128
3	C	6.6	1.5	5.9	481	124
3	D	5.1	1.5	5.5	279	196
3	E	5.1	1.4	5.8	499	194
3	F	2.4	1.4	6.0	476	314
3	G	4.0	1.6	5.9	751	214
<b>Average</b>		<b>80.0</b>	<b>1.6</b>	<b>6.0</b>	<b>378</b>	<b>303</b>

Note: Phosphate and potash are in pounds per acre.

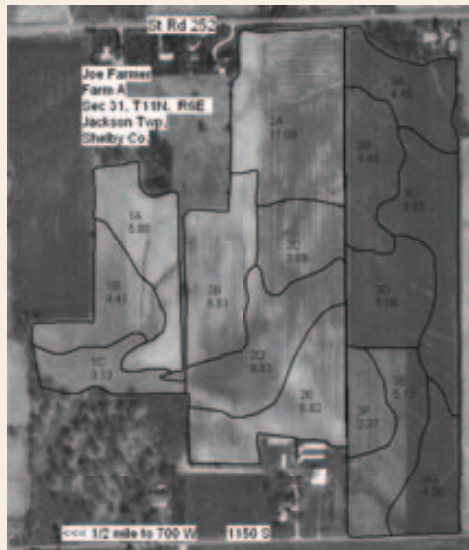
SOURCE: DANNY GREENE, GREENE CROP CONSULTING, FRANKLIN

### Soil map for example farm



SOURCE: NATURAL RESOURCES CONSERVATION SERVICE

### Sampling pattern for example farm



SOURCE: DANNY GREENE, GREENE CROP CONSULTING, FRANKLIN