



ADVANCED AG SYSTEMS'S

Crop Soil News

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"It is the crops that feed the cows that make the milk which creates the money."

Critical Limit to High Forage Yield

As more farms successfully move to the profitability of high (>60%) forage and very high (>70%) forage diets; the forage production becomes ever more critical.

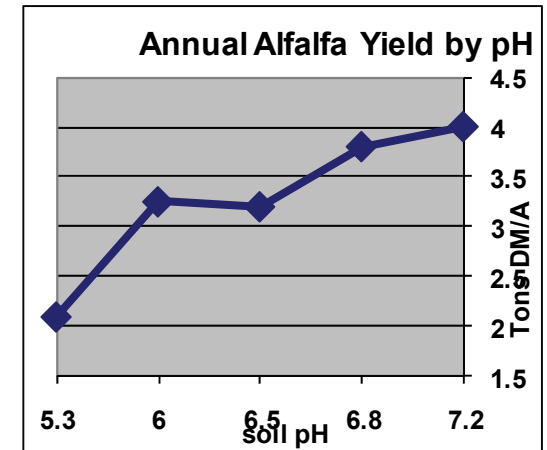
Legume production is key to 1: reducing the need for expensive soy meal whose protein costs 3x more than protein from alfalfa (lower cost of producing milk); 2: high nitrogen prices – legumes can fix a tremendous amount of nitrogen/a/year compared to grass stands that need purchased N; 3: first year rotated corn after legume needs no additional side dressed nitrogen. Unfortunately, legumes have been managed by neglect for very real reasons in the low milk prices (skipped top dressing); wet weather (skipped soil test/liming); and management by desperation (we need something to feed the cows – we will worry about the stands next year.

As you can see in the photos at the right, this neglect comes at a severe price. The upper photo was a full stand of alfalfa. Yet you can see by the center graph, at that pH it was not yielding to the soils and varieties full potential. Can you afford to leave 20% of the yield in the field? The result of this neglect is seen in the bottom photo where there is little alfalfa now left in the same field. The rest is expected to die over the winter. Many new seedings that die from "winter kill" are actually killed from not having the correct pH at seeding time.

There is a common perception that the lime needs make alfalfa growing an expensive proposition. Soil will decrease in pH as acid rain and ANY crop removes calcium and magnesium. **IT TAKES THE SAME AMOUNT OF LIME TO**



2008 a full stand of alfalfa and pH of 6.2



2010 found little alfalfa left and a pH of 5.8. It had been topdressed with macro and minor elements. Liming is the FIRST thing to look at for maximizing legume production.

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MAINTAIN pH REGARDLESS OF THE CROP. It just means the balance point is different. High lime need mean you are making up for what you didn't do before.

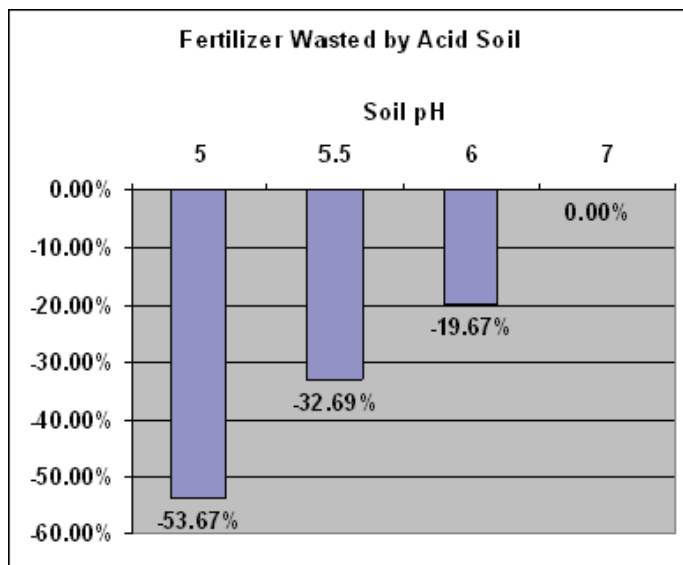
Fertilizer prices are going up - are you getting all that you paid for?

No we are not talking about fertilizer suppliers short changing you. We are talking about you short changing your crops.

The biggest regulator of the return on your fertilizer investment is to raise the pH to above 6.2 for corn or 7.0 for legumes. This is where fertilizer is most available and the plant growth can make the most use of it. As the pH drops, fertilizer efficiency drops 30 – 50% in producing crop yield.

Correct pH soil is a **BASIC MANAGEMENT PRINCIPLE** for any manager who has any desire to run a profitable farm. A few years back I had completely soil sampled one of the top managed farms in the area. He discovered to his surprise he had alfalfa fields that were at a pH too low to ever grow corn well! Ironically, he was putting too much fertilizer on high testing fields, to the point of hurting plant growth. What he saved on fertilizer more than paid for the needed lime IN ONE YEAR! Since then, several more farms have gone on to whole farm soil testing and have had the same results: decreased fertilizer bills and an increased need for corrective liming - and higher yields as the crops were allowed to reach the potential of their genetics.

The price of fertilizer is going up and the investment in this critical part of your crop production demands the highest return on each dollar invested. Fields of 5.4 – 5.8 are common, especially on rented ground. At these pH levels, as the chart above shows, **you are throwing away a third of your fertilizer** impact. Even at 6.0, nearly 20% is lost due to the acid soil's effect on availability. What investments do you make that can withstand a 20% loss and still return a profit? In this era of high prices, correcting the pH FIRST and then adding what fertilizer the checkbook will allow you, is the way to maximize the return in your crop.



Soil pH	Nitrogen efficiency	Phosphorous efficiency	Potassium efficiency
7.0	100%	100%	100%
6.0	89%	52%	100%
5.5	77%	48%	77%

Merry Christmas to All!

Sincerely,

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Hand
to Better
Agriculture**

