



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."

Advanced Ag Systems  
Research, Education, Consulting

## What a difference a year makes!

Last year we had several heat waves and the season was running record early. This year the season is running right on the 30 year average – something it hasn't done in a while. Skipping the political science and going to the real science, the Pacific Ocean has a multi-decade swing between warmer than average and cooler than average. It has recently swung to cooler than average which is one of the reasons we did not have an El Nino winter as some were predicting (El Nino is warmer than average Pacific waters). The other 500 pound (226.8 kilo's for our metric readers) gorilla in the room is that the Atlantic Ocean also has a multi-decade swing that is slightly shorter and off cycle from the Pacific. It has switched to a warmer than normal cycle which is why Hurricane Sandy did not get weaker but rather strengthened as it came up the coast. Both of these new cycles have some time to run and we will need to deal with the resultant shift in the weather from what we are used to (the new normal). Getting used to the extremes and adopting cropping systems/rotations that reduce risk, is going to be critical for producing sufficient high quality forage to support the high forage diets that give our farmers the competitive edge.

Working with farmers over the past 35 years has shown that some go through wild forage supply swings that they blame on the weather. Right next to them another farmer will have the same weather but because they follow a strict rotation, manage to have sufficient forage of high quality. The difference is in the rotation that many give lip service to but few follow – except the latter group that does well in any weather.

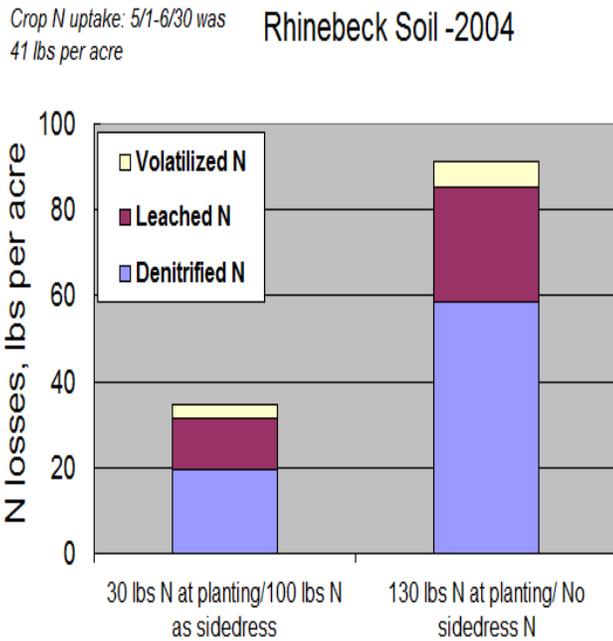
The first, and most critical factor in rotation is that **THE SOILS DRIVE THE ROTATION WHICH DRIVES WHAT THE COWS ARE FED.** Some of your farms are flat and uniform. Most are variable in soil type with some in extreme from excessively well to poorly drained. Cows can be fed a wide range of forages from all hay crop to all corn silage as long as it is highly digestible. The question is what high quality forage will the soils on your particular field produce the best under a sustainable, economical rotation? We get criticism for messing with winter forages, sorghums, and red clovers, yet each could be the best crop depending on the field/soil type/weather condition you are working under. By diversifying the crop but still producing quality forage, the weather risk from all your eggs in one basket, is greatly reduced. In the wet spring of 2009, farmers growing winter triticale found that they could get on those fields to harvest an early crop, spread manure, and plant corn because there is 60% less available water under a winter forage in the spring, compared to bare soil. In the drought of last year, those experimenting with the new short season forage sorghum found that an inch of water produces 0.84 tons of corn silage while that same inch produces 1.76 tons of BMR sorghum. On deep well drained soils, alfalfa will keep producing as it taps the deeper moisture. On poorly drained soils in a short rotation, red clover will produce as much or more than a good alfalfa yet have potentially higher forage quality. The point is you need to optimize the crop choice for each field and **HAVE A WRITTEN PLAN FOR THE NEXT 5+ YEARS.** If it is not written, then you are not rotating as the years easily slip by. The bigger the farm the easier the slip from sheer numbers. Yes, you can change the plan based on a number of factors (stuff happens), but with a plan you are always moving forward.

The other key factor is knowing what you are working with. We don't try to feed cows without a forage analysis but each year millions of acres are guessed at for soil fertility. Our zinc deficiency last year made the drought impact that much worse. If you are not soil testing the entire farm every other year, then you are guessing.

Neither of these factors are immediate tools for dealing with the cool and wet weather (for the majority of our readership area) of this spring. They are critical for long term survival and profitability of your farm. We have been through this weather before and know what works and what does not.

The biggest "does not" is to mud in a crop in a desperate attempt to "plant something somewhere." I have seen many examples of this and they are all disasters. The yield loss in corn for being slightly late is far less than the 14 – 27% yield loss from soil compaction. There is even greater loss from planter compaction squishing the seed in instead of placing it in an optimum soil condition. With duals you can get over soils that **should not be driven on**. That compaction yield loss will stay for that and many seasons after. If you are getting very late and the top couple of inches are now dry enough to till, no-till may be your safest bet for getting a crop. Other techniques are to run an aeration tillage tool at a 5 or less degree angle to just crack the soil and let it dry faster (the risk is cracking the soil and then getting a heavy rain, which will mean more will soak in – I never said my suggestions were risk free!). Moving to a one pass tillage system is one of the biggest gains you can make. A deep zone system with a rolling basket allows for tillage followed quickly by the planter. Our deep zone tilled fields are running 10 degrees warmer than the non-tilled. If the lower soil layers are too wet, you will just make a smeared mess so raise the unit to just work the friable soil in the top 6 – 8 inch level. This same process can be used with chisel plows. More farmers, especially those who are nearly all corn silage, are using narrow shanks (2 inch instead of 4 inch) and pulling a good leveler behind for a true one pass system. For wetter fields, they put the stops in and only work the shallower friable ground. This is not ideal but is better than working deep in wet soil to make a lumped, compacted, smeared mess; or to delay planting even further and take a yield hit as you get way past optimum planting window time.

Another step you can take is to **NOT** put all your nitrogen on with the herbicide at planting time. Nitrogen is critical for successful production of profitable crops. Corn uses only 10 to 20% of its total nitrogen in the first 6 weeks. The crop will need about 30 lbs of nitrogen in this time period. Any additional nitrogen for the rest of the season will sit there until it is used by the plant; or is lost by denitrifying or leaching. **In a wet year applying all the N at planting (with herbicide), 70% of the N was LOST** by the end of June (see graph at right). If it was sidedressed, it **was SAVED for the crop to use**. \$75 to \$100/acre in nitrogen is too expensive to throw away. Sidedressing can change that. It only costs around \$10/A for custom sidedress dry urea or slightly more for liquid nitrogen dribbled between the rows. If you want to do it yourself, you can use a herbicide sprayer and drop pipes to dribble on solution (20 ft wide sprayer can do 10+ acres/hour). Spinning on urea just before a rain (use an anti-volatilization agent) can cover 15 to 20 acres/hour. The time for doing this is when the corn is about a foot high. **This occurs in mid June when ALL your milk cow feed should be in storage for 2 weeks already**-so the excuse that I have to make haylage doesn't count.



Sincerely,

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