WNYCMA NEWS

Western New York CROP MANAGEMENT

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March 6, 2012

ARE YOU PREPARED?

By Rhonda Lindquist

Growing up in a family with avid NASCAR fans, I can't help but have at least a little bit of love for the sport in my blood. This year we witnessed some of the most unique and bizarre turn of events at the Daytona 500 ever. First, due to rain, the race was postponed to Monday night for the first time in its 54th annual running. And then there was the horrifying incident on Lap 160 when Juan Pablo Montoya's No. 42 car crashed into a track jet dryer truck, igniting a fire fueled by 200 gallons of jet fuel. The race was red-flagged for over 2 hours while debris was removed and the track was being repaired. In the end, Matt Kenseth's No. 17 went on to take the checkered flag in the wee hours of Tuesday morning.

It is probable that the speedway had a plan of attack to address these situations, as unlikely as they were. Similar to the racing industry, farms often face challenging and unusual circumstances. Are you equally prepared to address situations on your farm? Whether or not you are a CAFO farm, developing an Emergency Action Plan is the first step in preparing to respond to a potentially dangerous situation. Emergency plans outline the actions to take in the event of a fire or spill.

When preparing a plan, really think about the bad things that could happen and what you would do if they did. For example, if the valve on your gravity out pipe to the manure storage broke in the open position or a petroleum tank is accidentally punctured - ***Where would the manure or fuel flow? Where is the nearest watercourse? What would you do? Who would you call? What equipment or supplies would you need?*** These are just a few of the questions you should be asking yourself. If you have no answer or the answer is a plane ticket to South America, you should probably address the source of the risk.

Next, it is critical that all farm employees are trained and familiar with the proper protocols outlined in the plan. Communication is a key component in making your plan affective in the event of an emergency.

Finally, don't leave the plan on the shelf, review it periodically and update it as needed. Be prepared in advance to respond efficiently to safeguard life and the environment.

So you be the judge, was NASCAR prepared? Don't let your farm take the risk. Let the staff at the Crop Management Association assist you in preparing an Emergency Action Plan.

Things I Learned in Iowa

By: Dan Steward

In February, David DeGolyer and I had the opportunity to attend the Iowa Soybean Association's On-Farm Network Conference. The On-Farm Network focuses on precision agriculture tools and technology to collect information that can increase growers' profits. It was a great opportunity to see some new geography, mingle with Iowa farmers and hear a lot of great presentations on research trials. The following are some of the things I learned during and after the meeting.

- In talking to a number of farmers, land is commonly selling for $7,000 per acre and $10,000 per acre is not unheard of. It can get personal. One farmer told me that it is not uncommon for farms to turn in their neighbors for failure to follow a conservation plan…
- A lot of anhydrous ammonia still goes on in the fall even though the farmers know they are going to lose a lot of it. The majority of the time fall anhydrous ammonia applied fields are the lowest yielding fields because of this loss of nitrogen. The reasons they do this are apparently cultural; it is a way to spread the workload out for both the farmer and the company supplying them with the anhydrous. Additionally, most of the hog manure is applied in the fall for the same workload reasons and the added reason that soil conditions are usually drier in the fall, so there is less compaction. My comment to a farmer (you can be a little more frank with your comments when you know you are not talking to a potential client) is that they need to gear up to put their nitrogen on at a time when they will lose less of it. i.e. at planting or sidedress. I gave an example of our dairy farms putting the majority of their manure on corn ground in the spring, and how it was just understood that you had to have the capacity to get it done because there is no alternative.
- Variable rate application of fertilizer or seed is not really taking off. Even though most farmers I talked to are buying their planters with row shut-off clutches, they have not found that it is worth it to change seeding rates throughout the field. The same thing is true for fertilizer; there are just too many variables in the growing season from year to year to know in advance how to vary rates. Even looking at the data gathered from the preceding year, it wasn't always clear what would have been the ideal thing to do. On the other hand, even with their large field sizes, most of the farmers felt that having automatic clutches to shut off the planter on irregular end rows to avoid overlap was worth it. This reflects analysis presented by the University of Tennessee that row unit shut-offs paid for themselves on a 12-row planter planting 1,000 acres per year if the planter was going to be kept for at least three years.
- Farmers are very interested in cooperating in research trials on their own farms. The On-Farm Network helps them set up the strip trials, giving the farms guidance for the trials. The farmer plants the plot marking rows with GPS or flags. The On-Farm Network helps the farm gather whatever in-season information is appropriate. This usually includes a geo-referenced in-season aerial photo. The GPS units on combines are calibrated and the plots harvested within the strips. The On-Farm Network staff then processes the data. They might evaluate the data within the field according to the soils mapped within that strip. Because these trials are carried out over many farms and weather conditions, the data is very powerful. Farmers are also very interested in the research data because they had an investment in it.
- Palmer Amaranth (pigweed family) has become a very serious Glyphosate-Resistant weed in many areas. This is especially true in Tennessee in soybeans. Basically, planting Roundup-Ready Beans in the areas where this weed has become prevalent is of little value. Once the weed has gotten over 4" tall, there are no herbicides to control it. In areas that are prone to dry weather and routine failure of pre-emergence herbicides, fields of soybeans are being disked down because nothing can be done by the time they know they have a mistake. The lesson: let's not rely on one mode of action to control our weeds, especially in corn-soybean rotations. Once resistant weeds get a start in an area, they are probably going to affect everyone, not just the farms that aren't rotating their herbicides.
- Nitrogen stabilizers have a place, but you need to know what they are doing to get the most out of them. Nutrisphere N is not a good volatilization inhibitor. Nitrification inhibitors don't work on half the nitrogen in UAN because it is already in the nitrate form. In all of the On-Farm Network's studies, they have never seen a significant response to a nitrification inhibitor on manure. http://www.isafarmnet.com/2010OFNwebinars/20100325NStabilizers.pdf
- Aerial photos taken during the growing season are a very useful tool. They are especially useful in identifying application errors of fertilizer, manure and chemicals. Striking examples of each were shown, that probably would have been impossible to identify otherwise. Additionally, the aerial photos showed the effects of strip trials when it came to nitrogen and fungicides and the interaction with soil types.
- Managing nitrogen isn't as cut and dried as 1 lb of Nitrogen per bushel of expected yield. There are so many variables; there is not one single rule that applies to all situations. You can improve your efficiency and yields if you look at individual situations and tailor your program to those situations.

If you are interested in any of these topics, you don't have to go to Iowa to learn more. The On-Farm Network has many of their presentations online at the following website: http://www.isafarmnet.com/

Go to www.wnycma.com
for updated information and the presentations from our
2011 Annual Meeting

Should Corn Ear Type Be Considered In Hybrid Selection?

submitted by Tom Frederes

Below is a short article on the subject from Peter R. Thomison of Ohio State,

Many seed corn companies classify their hybrids as to "ear type" using terms such as flexible, fixed, indeterminate, determinate, and prolific, among others, to characterize growth, size, and number of ears.

Most corn hybrids grown in the Corn Belt have been developed to produce only one harvestable ear under normal production conditions. In contrast, prolific (multi-eared) corn hybrids have the capacity to produce more than one ear per plant. One-eared corn hybrids are often characterized as having an indeterminate or determinate ear growth habit.

According to some seed companies, a hybrid's capacity to adjust ear size (i.e. length, girth) can play a significant role in determining its yield potential. The perception is that a "flexible" or "flex" ear hybrid has a more indeterminate ear size which can adjust to growing conditions by changing ear size. This supposedly allows flex hybrids to take advantage of optimum growing conditions and to compensate more for variation in plant population.

A fixed ear hybrid is associated with a relatively determinate ear size which limits its capacity to adjust to growing conditions or to compensate for variation in plant density. Plant population is considered more important for a fixed ear hybrid than for a flex ear hybrid because the latter can increase ear size (and potential yield) whereas a fixed ear hybrid cannot.

Prolific hybrids are less sensitive to variation in plant population than single ear types. At low plant densities, prolifics have the ability to average more than one ear per plant, and at high densities, they exhibit resistance to barrenness. Although prolific corn hybrids have been used widely in the South, the breeding and development of prolific hybrids adapted to the Corn Belt has been limited.

There is surprisingly little published data to substantiate the various claims made with regard to different ear types. In a recent study conducted in Illinois and Wisconsin, two corn hybrids varying in degree of ear determinacy were evaluated across a range of plant populations and planting dates. Although the primary focus of this work was to investigate the effects of uneven emergence in corn, the results suggested little difference in yield response between hybrids to varying population despite differences in ear type. In contrast, preliminary results of an on-going study at Ohio State indicated that LH119 x LH51, a hybrid with a relatively indeterminate ear length, showed a greater capacity to adjust to low plant populations than B73 x LH38, a hybrid with a relatively determinate ear length. The inconsistencies between these studies may be explained in part by differences in hybrid maturity, genotype, and environment.

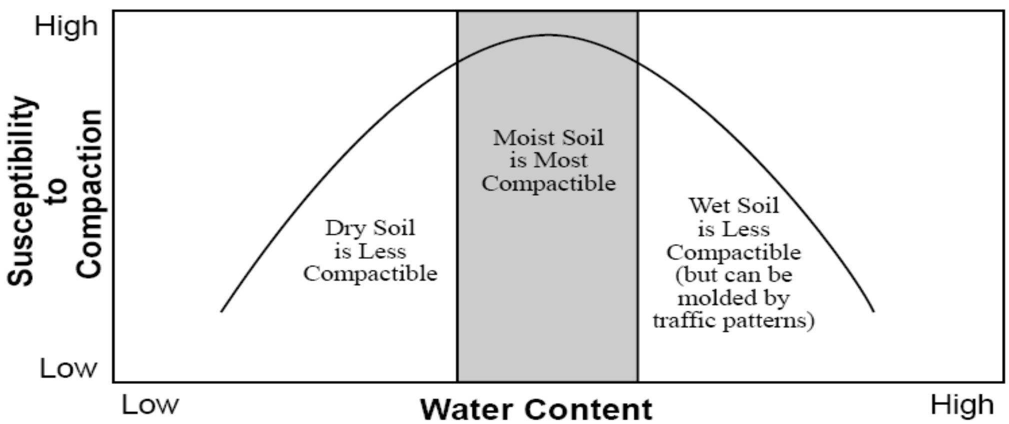
The relative significance of ear type must be considered in conjunction with overall hybrid performance. **Remember to select a hybrid for its performance not because it possesses a particular trait or characteristic like flex or fixed ear size.**

SOIL COMPACTION

From article by: DeAnn Presley, Soil Management Specialist, Randy Price, Biological and Agricultural Engineering, Kansas State, Keith Janssen, East Central Kansas Experiment Field Station

Spring is the perfect time to examine soils for evidence of compaction, and it also happens to be a time when soils are very vulnerable to compaction. Most soils across the state will be recharged with water from winter and spring precipitation. Fields should be assessed for compaction when the soil is at or near field capacity, the point at which the entire soil profile is moist, but not saturated.

Soil compaction occurs when soil particles are pressed together, limiting the space for air and water. The amount of soil water present is a critical factor in soil compaction potential.



Assessing soil compaction

If compaction is suspected, a shovel or soil probe can be used to find out for sure. With a shovel, look for either a surface crust, or for platy soil structure, i.e., when the soil structure resembles a stack of dinner plates. Insert a soil probe slowly, and feel for a layer of increased resistance. Quite often, if a compacted subsurface layer is present, you can "punch through" the tillage pan, and the soil beneath it will feel less resistive.

Cone penetrometers may also be used to locate compaction. Since penetration resistance is a function of soil density, texture, and moisture content, and not necessarily just compaction, penetrometers need to be used in combination with some device to assess soil moisture and texture, such as a soil probe. Readings should be taken when the whole profile is at or near field capacity (approximately 24 hours after a soaking rain). The best time of the year for the compaction measurement is the spring because the whole profile has usually been thoroughly moistened during the winter. If the soil is too wet and muddy, compaction could be underestimated because the soil water acts as a lubricant. If the soil is too dry, compaction could be overestimated because roots will be able to penetrate the soil when it re-wets.

The idea behind using the penetrometer at field capacity is that this is the best-case scenario to mimic the penetration power of roots. If using a penetrometer, push or drive it into the soil at a rate of 1 inch per second. Record the penetration resistance at each depth increment. Note the depths at which the penetration resistance exceeds 250-300 pounds per square inch (psi), a range that is root-limiting when the soil is moist.

Controlling different types of compaction

Shallow, surface compaction is related to pressure applied to the surface of the soil, and can be controlled by better distribution of a load, either by using a larger tire size or more tires. GPS based auto-steering systems are a tremendous aid for establishing and maintaining a controlled traffic system. Shallow compaction is normally removed with subsequent tillage operations and to some extent by freeze-thaw and wet-dry cycles, but should be avoided at planting time in conventional or reduced tillage, and at all times in no-till.

Sub-surface compaction is related to the maximum axle load, and is not reduced by distributing the weight across more tires or larger tires. The only way to avoid sub-surface compaction is to limit traffic with heavy axle loads. Keep in mind that a 1000-bushel grain cart can weigh 36 tons or more! *(4,000 gallons of manure is over 16 tons)*

Sidewall compaction occurs if the crop is planted when the soil is too wet and the planter openers push on the side of the soil furrow, creating a compacted zone. Sidewall compaction is preventable by delaying planting until soils are sufficiently dry. Use of spoke wheel seed slot closers can also be helpful. If you can mold the soil into a ball in your hand and the soil ball will not easily crumble apart, it is too wet to plant.

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Preventing soil compaction

The best cure for compaction is abstinence – that is, not working or driving on soils that are too wet. Crop fields can be at risk from compaction from grazing animals or when spreading manure just as much as when using any other farm equipment, especially in conditions near field capacity. Fall-planted cover crops could provide support for livestock and/or manure spreaders.

In order to decide if the soil is too wet for tillage or other ground-engaging practices (tillage, fertilizer application, etc.), take a spade and dig up some soil from the zone in which you plan to work. For example, if you plan to perform an operation at a depth of about 6 inches, dig down 6 inches and pull out a handful of soil. Take that handful of soil and see if it is moldable like putty, and then roll it back and forth between your hands. If you can form it into a wire that is 1/8 inch in diameter, then it means that your soil is above the "plastic limit," and it really needs to dry out before doing the field work.

Can you manage soil compaction once you have it?

If you determine that you have compacted soils, fall or winter is usually the most appropriate time to address the issue (when the soil is dry). Deep tillage, such as subsoiling, takes a lot of time, fuel, and power, so you need to make certain it is absolutely necessary and economically feasible before performing such operations. The best remedy for eliminating compaction is prevention.

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