

# THE CROP CONNECTION

A MSUE Greater Thumb Ag Team Publication

## INSECT PESTS: SOME OF THE CRITTERS TO WATCH FOR IN 2009 *By Martin Nagelkirk*

Insect pests hold surprises for crop producers and observers each season. While no one can anticipate all insect threats, a few pests warrant special attention. Here are a few candidates for 2009's "Most Unwanted" list:

**Western Bean Cutworm:** Adult moths found their way to the Thumb and Saginaw Valley last season. The task this season is to first monitor the number of adults to determine the threat to corn and dry beans. This is done by simply counting the moths caught in individual pheromone traps beginning in early July and continuing for the remainder of the month (growers wishing to participate in trapping can contact their local Extension office). Where the cumulative moth catch for an individual trap exceeds 30, the adjacent corn or dry bean field should be scouted. For corn, consider treatment when 5% of the corn plants have egg masses or small larvae. Economically damaging levels of the cutworm may not occur this season. Nevertheless, there may be some isolated exceptions.

**Soybean Aphids:** Trap catches this fall were reportedly high, but egg numbers were extremely low. This contradicting evidence leaves experts unsure of their '09 prediction. This may mean that there may only be random hotspots in '09 rather than a statewide infestation. In any case, all growers will need to be on alert for this important pest. The recommended action threshold remains at 250 aphids per plant.

**Potato Leafhopper:** This critter has lost some notoriety in recent years among dry bean growers with the adoption of insecticide seed treatments and strict broadcast spray applications. Nevertheless, dry bean and alfalfa growers are encouraged to keep up their guard. This insect can still cause significant losses to the two crops when unprotected and dry conditions persist.

**Seed Maggots:** Every season a few isolated fields of dry beans and late planted soybeans seem to take a significant hit from the corn seed maggot. The adult flies are attracted to freshly decaying organic matter. So if you are incorporating manure, weeds or green cover crops within a couple weeks of planting, consider using a seed treatment.

An excellent source of current information and recommendations is MSU's "Insect, Nematode and Disease Control in Michigan Field Crops" (E-1582). Growers and commercial applicators are encouraged to purchase the 2009 edition from your local Extension office.



March/April  
2009

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<http://fieldcrop.msu.edu>

Nitrogen. It is one of the most important factors influencing your corn production but it does not come cheap. Since 2002, nitrogen prices have steadily increased causing farmers' fertilizer budgets to grow significantly. That is, unless the majority of your nitrogen is coming from manure. Manure is a good source of nutrients for your growing corn crop and comes at a lower price than commercial fertilizers. However, the amount of nitrogen available from a manure application can vary greatly based on many factors such as application method, incorporation, animal source, and storage type. There are steps we can all take to make the most of our manure applications as well as manage the risk of nitrogen applications being too low for your corn crop or too high for efficient manure management.



The first step in fine-tuning nitrogen management is obtaining a good manure sample and making the best estimate of plant-available nitrogen from these samples. Timing of manure applications plays a crucial part in estimating your plant-available nitrogen. Manure surface applied in the summer will be different than manure injected in the fall which will subsequently be different than a spring application of manure. This is why it is important to take manure samples at the time of pit or lagoon agitation and loading for a manure application. Multiple sub-samples should be taken and then combined for a representative sample. If your manure storage system is stratified, sample the manure at each stratum, for example, the watery top, the slurry in the

middle, and the bottom semi-solid or sand layer. Each sample will result in different application recommendations and nutrient amounts.

Manure applications will also alter according to the end goal of your application. Different rates will result if you are aiming to apply all of the nitrogen needed for your corn crop compared to manure applications that are limited by phosphorus standards. The key to any application is to calibrate your application equipment. Accurate calibration along with properly taken manure samples will result in the most accurate estimate of nitrogen supplied to your corn by your manure.

Another step manure users can take is to estimate in-season nitrogen availability through early season soil sampling. From the time of manure application to plant uptake of the nitrogen, the amount of available nitrogen can be lost through leaching, volatilization, and/or denitrification. The question come spring is how much has been lost. The answer to this important question allows for nitrogen corrections through sidedress application. The best way to estimate this loss and how much more nitrogen you might need to apply is by using the pre-sidedress nitrate test or PSNT. The goal of this test is to gauge the amount of plant-available nitrogen in the soil after the temperatures have warmed enough to convert ammonium and organic nitrogen to nitrate, the form primarily taken up by plants. Soil samples for the PSNT should be taken when corn is 6 to 12 inches tall to a depth of 12 inches. Of course, the timing for PSNT sampling can be inconvenient but the dollars that could be saved by testing could pay off in a big way.

Using the PSNT as a guide in season, you can make applications of additional nitrogen where needed and have greater confidence that the dollars spent on nitrogen fertilizer are worthwhile. Following these basic steps can put you and any producer on track for making the most out of your manure and keeping more dollars out of the fertilizer budget and in your pocket.

## SHORTER ALFALFA ROTATION BENEFITS

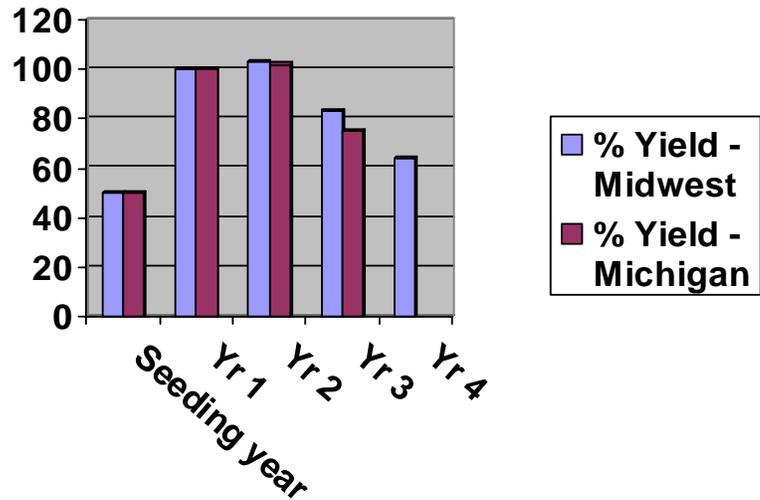
By Phil Kaatz

Producers of alfalfa may be asking whether it's time to rotate their fields in alfalfa production to another crop. The value of each crop produced should be considered before the decision is made for the 2009 cropping season. Research by Dr. Dan Undersander, University of Wisconsin Forage Agronomist, says that shorter rotations of alfalfa mean greater profit per acre for the entire farm. This greater profit is the result of various factors such as higher alfalfa yield, higher forage quality, reduced pesticide use, larger nitrogen credits and increased corn yields. Of these, Annual yield has the largest impact on a farm's profitability because inputs, including harvesting costs, change little as yield increases. On-farm measurements of alfalfa yield and inputs were able to show that yield was the single most important factor determining end profit. This relationship is so strong that farmers should do all they can in managing their crop to remain in the high yield range with their alfalfa.

One of the challenges to maintaining or increasing alfalfa profitability is declining yield as the stand ages. This declining yield is the result of environmental stresses, wheel traffic, and various diseases that appear as the age of the alfalfa stand increases.

The figure included reflects the decrease in alfalfa yield over a number of years. For the first year, the Michigan and Midwest average alfalfa yields are considered to be 100%. In year two, yields generally increased from 102 - 103% of year one yields. After the second year, alfalfa yields tend to decline; approximately 17 - 25% in the third production year and 34 % in the fourth production year. This demon-

strates just how much yield can be impacted as the stand ages. Alfalfa yield decline with advancing age



of stand indicates that farmers should consider turning over alfalfa stands sooner or in a shorter timeframe in order to stay in that high yield range.

Farmers also gain other benefits from turning over alfalfa stands sooner, specifically a valuable return of nitrogen to the soil. The additional production that may be realized in a corn crop from the nitrogen and the economic value of the hay crop should be analyzed for a particular operation to help determine when to turn over your alfalfa stand. Farmers should consider that in a rotation with corn following alfalfa, corn will yield 10-15% higher and have adequate nitrogen (other than starter) (~150 lbs. N) for the total corn crop when compared to a corn following corn rotation. This would increase your net return by not only increasing yield but reducing your fertilizer budget.

While it might seem tempting to leave in an alfalfa stand for a longer period of time to get the most out of the seeding, a producer should weigh the advantages and disadvantages of keeping that stand in another year before making the final management decision.



## FINE TUNING SPRING POTASH APPLICATIONS *By Bob Battel and Darryl Warncke*

It wasn't too long ago that potash (0-0-62) was considered the cheap nutrient. Lately, I've been hearing per-ton potash costs ranging from \$800 to \$1,000. That's a range of 64 to 80 cents per pound of nutrient. Compare that to 23 cents (\$290 per ton of potash) as recently as fall 2007. Routinely broadcasting 150 pounds of potash requires more thought than in the past.

To make a good decision about any fertilizer application this spring, consider:

- the fertilizer cost
- the fertilizer value
- what's needed for crop growth
- the likelihood of a benefit, both short-term and long-term, the impact of reducing the rate

We've covered the fact that potash is expensive. Is it valuable? Sure it is. Potassium is a major nutrient required for optimum crop growth and development. But, a potash application will only deliver a return on your investment if your soil test levels require it. Let's consider what's needed to grow a crop.

You've heard it before. The first step to determine how much of a nutrient is needed to grow a crop is to soil test. That is the best guide to decide how to allocate your limited fertilizer budget.

Once you've had a chance to review your soil test results, start strategizing your applications while remembering that the lower the soil-test potassium (K) level, the greater the response to applied potash. A concept that is useful in determining appropriate fertilizer levels is the nutrient critical level (CL). The CL is the level at which a nutrient level is sufficient to reach yields of 95 to 97 percent of maximum. With soil K, the CL varies with soil texture, with coarser textured soils having a lower CL than finer-textured soils. Sandy soils have a CL of 85 ppm, loamy soils 105 ppm, and clay soils have a CL of 120 ppm. That is to say if you have a loamy soil with a K soil-test level of 105 ppm or greater, you can expect that the potassium supply will be enough for at least 95 percent of maximum yield.

For loamy soils testing between 105 ppm and 135 ppm, the recommended amount of K for most

crops would be the amount removed by crop harvest. See the table for a list of crop K removal for selected yields. For loamy soils testing less than 105 ppm, the recommended amount of K would be crop removal plus an amount to build the soil-test level over four years to the CL. At soil tests increasingly greater than 135 ppm, the recommended amount of nutrient is rapidly reduced until no potash would be recommended. For most field crops, except hay crops, a soil-test level greater than 155 ppm would result in no recommended K.

Using the information from the table, you would want to apply potash first to soils testing less than the CL, and reduce or defer applications on soils testing in the maintenance range. This brings us to the impact of reducing rates.

**TABLE 1. Nutrient removed in harvested portions of crops**

Crop	Yield Unit	K <sub>2</sub> O removed (lb/acre)
Corn grain	180 bu.	49
Soybeans	60 bu.	84
Wheat grain	100 bu.	37
Alfalfa	8 ton	400
Dry beans	40 cwt.	64
Sugar beets	30 ton	99

E2904 Nutrient Recommendations for Field Crops in Michigan

On average, the soil-test level of K will decrease 1 ppm for each 8 to 10 pounds of K<sub>2</sub>O removed beyond the maintenance level. For sandy soils, you can figure a 1 ppm decrease for every 4 pounds of removal, and on clay loams you can expect a 1 ppm decrease for every 14 pounds of removal. Again, refer to the table.

If a soil test for a given field started out at the upper end of the maintenance range (135 ppm for our loam soil), and you harvested a 180-bushel corn crop (*continued on Page 5*)

## PLANTING CORN & SOYBEANS: WHEN IS TOO EARLY?

By David Pratt

Everyone involved in mainstream corn and soybean production would agree that over the last 5 years planting dates have been getting earlier than the 10 years previous. So far, we have managed to get away without a killing frost in mid May. As a result, I am confident that we have achieved higher yields. Similarly, Iowa and Illinois are also seeing earlier planting dates than in the past with data indicating higher yields have been the result.

In the past, waiting for soils to warm up was the determining factor for when to plant rather than the calendar. With the advent of recent technology, seed treatments, cold tolerant varieties, better seed handling and other factors, soil temperature does not play as important of a role as in the past. As a result of these advances, early planting while soils are still cool can result in excellent plant emergence though emergence may be slow. From personal observation, plants that took three weeks to emerge were still further ahead of those planted two weeks later that emerged in one week.

The key to early planting is to delay emergence until after the last killing frost which is typically in early May in this area. However, anything is possible here in Michigan when it comes to frost. One could argue that corn or soybeans planted mid May have just as much risk when you consider Michigan's erratic weather. In the last 20 years, I have seen more corn and soybeans killed after Memorial Day than before and, in all those cases, planting at the end of

April or mid-May would not have made a difference. I think the best strategy may be to look at the 10 – 14 day forecast before you plant and if it looks favorable, go ahead and plant. Planting into cold soils should not be an issue. Additionally, if you have to choose, your first priority should be planting the corn then immediately plant soybeans.

Growers have been very successful over the last 5 years planting corn mid to late April. Our goal is to harvest as much sunlight as possible. The sooner we get the plants out of the soil and achieve canopy

closure the more sunlight we can harvest. Even when we think the plants are not growing they are still doing something and that something usually equates to increased yield.

Another important consideration for planting is soil conditions; if the soil is too wet, you have the potential to greatly reduce yield by negatively impacting your soil.

Make sure if you are planting early that soil moisture conditions are adequate. If they are not, you could cause compaction barriers in the soil that will not allow roots to penetrate thus reducing moisture and nutrient availability for the rest of the season. Remember the most important date is the day you plant, if you make a mistake it could cost you for the rest of the season. Although planting mid April can be very successful, it doesn't come without risk so make sure it is a risk you can afford to take. If you have any questions, feel free to give me a call at 989-670-8144.

### Don't miss the 2009 Michigan Soybean Yield Contest!

Entry fee is only \$25.

Each class winner is awarded \$1,000 towards a trip to the 2010 Commodity Classic in Anaheim, California!

For more information, go to : <http://web1.msue.msu.edu/soybean2010/> or call your local extension office.

## FINE TUNING SPRING POTASH APPLICATIONS *(continued)*

(49 pounds of removal per table above), you might expect the soil test level to decrease 4.9 pounds (49 pounds removed divided by 10 pounds removal per ppm decrease). In this example, it would take 6 years of constant similar removal for the soil test to decrease from the upper end to the lower end of the maintenance range.

The take home message is that for many of our soils that test in adequate ranges, you have built up a soil nutrient bank, and you can probably afford to withdraw some funds for the time being. However, now it is more important than ever to monitor your account balance by testing the soil regularly.

When it comes to Average Crop Revenue Election (ACRE), some folks are telling me, "I do not have all the bugs worked out so I will wait." However, that may not be the best suggestion. The new Farm Bill Act of 2008 gives producers of USDA program crops, such as soybeans, wheat, and corn, the option to enroll in a new counter-cyclical revenue plan. ACRE is being offered as a new alternative to the current counter-cyclical payment option under the old 2003 Farm Bill. This new option is based on gross revenue (commodity price times yield) instead of price only.

ACRE uses a formula that is a combination of state average yields, farm average yields, and the national marketing year price to determine levels of revenue that can be guaranteed. It then calculates deficiency payments for each covered commodity if they fall below the set levels. There are two revenue triggers that have to be met before any ACRE payments are generated; the first trigger is at the state level and the second trigger is at the farm level. To trigger a payment under ACRE the actual revenue for both the state and the farm must be less than their corresponding calculated guarantees. The actual revenues are the current marketing year price multiplied by the state average yield and the actual farm level yield, respectively. If both triggers are reached, the payment to the farm will be the difference between the state guarantee and the state actual revenue.

Producers and landowners have the option to sign up by June 1<sup>st</sup> any year between 2009 and 2010. Just be aware that once you enroll you're in this option for the remainder of this farm bill. When signing up for ACRE you will forfeit 20% of your current direct payments through 2012. You will also give up all potential price-based counter-cyclical payments from the previous farm bill. Additionally, the loan rate used to calculate your loan deficiency payments or marketing loans will be lowered by 30%. However, the potential loss of CCPs and LDPs may not be too critical. If market prices do fall enough to trigger these payments, it would be very likely that the ACRE payment will be as large or larger.

Although the ACRE program may resemble crop revenue insurance, it is not crop insurance and is not a replacement, as there are some important differences. The ACRE guarantees are based on longer term average prices and yields, so they will not fluctuate as much from year to year as crop insurance guarantees. In fact, ACRE regulations state that the guarantees cannot increase nor decrease more than 10% each year. This helps accomplish the fundamental goal of ACRE, which is to stabilize gross revenues over the next 4 years.



Additionally, one of the ACRE calculated guarantees and the size of the resulting payment are based on state level yields, not farm yields like most crop insurance policies. When the state as a whole has a good year, ACRE does not protect a farmer who has a poor production. In addition, ACRE revenue uses the marketing year cash price to calculate actual revenue while crop revenue insurance uses futures prices at harvest time. So, while ACRE payments can be a useful risk management tool for sharply falling prices or widespread yield losses, they do not replace farm level crop insurance protection. It is hoped that each of you have taken the time to evaluate your crop insurance options and enrolled at the level that is right for your farm's risk management situation. Consider visiting my web page (<http://www.msu.edu/user/steind/>) to view some of the video recorded presentations related to the new Farm Bill or you can download ACRE and SURE evaluation templates that may help you to better evaluate your Farm Bill.

## UPCOMING EVENTS

### Sprayer Calibration Meeting

March 24, 2009, 9 am - 3 pm  
North Branch American  
Legion Hall, Lapeer County  
Cost: No charge  
RUP credits pending

RSVP to Lapeer MSUE  
810-667-0341

### Extension Core Manual Review and MDA Pest Exam

March 27, 2009  
Review: 9 am, Test: 1 pm  
Lapeer MSUE Office  
Lapeer, MI  
2 RUP credits available  
RSVP to Lapeer MSUE  
810-667-0341

### 2009 Michigan Agri-Energy Conference

March 30-31, 2009  
Radisson Plaza Hotel  
Kalamazoo, MI  
For more information or to register go to [www.agrienergy.org](http://www.agrienergy.org) or call ANR Conference Services at

### Farm Bill Training and Update Meetings

April 7, 2009, 9 am– 12 pm  
Albee Township Hall  
Burt, MI

April 7, 2009, 2 pm– 5 pm  
Baker College Welcome Center  
Owosso, MI

Program presented by the Farm Service Agency's and MSU-Extension offices of Genesee, Shiawassee, and Saginaw Counties

For more information or to pre-register, contact Saginaw Co. MSUE Office at 989-758-2500.

### 2009 Ag Expo

July 21-23, 2009, 9 am– 5 pm  
Michigan State University  
Intersection of Farm Lane and Mt. Hope  
East Lansing, MI

For more information, go to <http://www.agexpo.msu.edu/> or call 800-366-7055

## USEFUL AGRICULTURE WEBSITES

**MSU-Extension Field Crop Area of Expertise team,** <http://fieldcrop.msu.edu>

What you'll find:

Bulletins, FACT sheets, and other reference information

**Soybean 2010 website,** <http://web1.msue.msu.edu/soybean2010/>

What you'll find:

Soybean production and management information and references

**Soil Fertility and Nutrient Management website,** <https://www.msu.edu/~warncke/>

What you'll Find:

Nutrient recommendation calculator, soil sampling information

**Roger Betz, MSUE Farm Management Educator's Website,** <https://www.msu.edu/~betz/>

What you'll find:

2008 Farm Bill information, ACRE and SURE calculators

**Dennis Stein, MSUE Saginaw Valley District Farm Management Educator's Website,**

<https://www.msu.edu/~steind/>

What you'll find:

Information on land rent, cost of production, wind energy, and more

**Iowa State University Agronomy Extension Corn Nitrogen Rate Calculator,** <http://extension.agron.iastate.edu/soilfertility/nrate.aspx>

What you'll find:

Michigan and North Central Region geared New Nitrogen Recommendation calculator

**Field Crop CAT Alert,** <http://www.ipm.msu.edu/field-cat.htm>

What you'll find:

Weekly updates on production issues during the growing season

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**INSIDE THE CROP CONNECTION**

**INSECT PESTS: SOME OF THE  
CRITTERS TO WATCH  
FOR IN 2009**

**Page 1**

**SHORTER ALFALFA  
ROTATION BENEFITS**

**Page 3**

**PLANTING CORN AND  
SOYBEANS: WHEN IS TOO  
EARLY?**

**Page 5**

**MANAGING YOUR MANURE  
NITROGEN**

**Page 2**

**FINE TUNING SPRING  
POTASH APPLICATIONS**

**Page 4**

**ACRE CAN IMPACT YOUR  
FARM**

**Page 6**

**The Crop Connection** is a publication of the Michigan Greater Thumb Field Crops Ag Team and is provided without charge to area residents.

**Comments or Suggestions?** Please contact Emily Sneller, at 989-758-2504 or [snellere@msu.com](mailto:snellere@msu.com).

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