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Agronomy Notes

Capital Region

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Capital Region Extension Agronomy Team Mark Goodson, Editor

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Change in Nutrient Management Policy

Some important changes have occurred this month in the nutrient management program in Pennsylvania. Earlier this month a judge ruled in a case concerning a nutrient management plan appeal, that the State Nutrient Management regulations did not fully address the requirements in Act 6 because they do not identify phosphorus as a nutrient under the Act, nor do they provide a procedure to determine proper application rates for phosphorus.

As a result, the State Conservation Commission on May 25 adopted a new interim policy that will require planners to include a phosphorus application component to any Act 6 nutrient management plan (CAO, CAFO, compliance plan or volunteer plan) submitted to the Commission or conservation district after May 25, 2004. New regulations to include phosphorus as part of nutrient management plans in Pennsylvania were already being developed. These draft regulations are expected to be published for public comment in the near future and it is anticipated that they will take effect in 2005. Thus, the policy adopted this week is only an interim policy until these new regulations take effect.

Specifically, the policy recommends the use of the Pennsylvania Phosphorus Index, Version 1, to address the phosphorus application portion of the plan. This means that an N based nutrient management plan, as currently required under Act 6, will need to be evaluated with the P Index to determine if there is significant risk of P loss under this plan. If a high risk is identified, the N based plan must be modified to address this increased risk. The P Index is available as a factsheet (http://panutrientmgmt.cas.psu.edu/pdf/phosphorus_index_factsheet.pdf) and as an excel spread sheet (http://panutrientmgmt.cas.psu.edu/pdf/phosphorus_index_spreadsheet.XLS).

Certified nutrient management planners, who have also completed the Phosphorus Index Training that has been offered over the last several years, will be able to write P plans under this interim policy. Phosphorus Index training will also be offered in the future. The next training is on July 8, 2004. (See the Pennsylvania Nutrient Management Program Web Site at: http://panutrientmgmt.cas.psu.edu/main_training_opport.htm for more information and to register for this workshop.)

Finally, because of the increased planning costs associated with this new policy, the Commission also adopted new higher cost share rates under the Plan Development Incentives Program. Details on this can be obtained from your local county conservation district nutrient management staff.

Detailed information is being sent to all certified nutrient management planners and more information will be available in the near future through Penn State Extension and other agencies, and on the Pennsylvania Nutrient Management Program Web Site at: http://panutrientmgmt.cas.psu.edu .

Douglas Beegle
Department of Crop and Soil Sciences

July Tips to Maximize Crop Insurance Protection

Acreage Reporting DEADLINE: Producers are required to file acreage reports with **both** their crop insurance agent (by 7/15 for most spring crops) and at the county FSA office. If there are differences between the two reports, provide a written explanation because the law requires USDA to do a computerized comparison of the reports. Be careful to assure that the reports are accurate including planted and prevented planting acreage for each farm because this will set your amount of protection for 2004 (most surprises at the time of loss claims result from reporting errors).

Retain a copy the signed acreage. Summary of Protection or Schedule of Insurance will arrive in 4 to 8 weeks. Compare the information with your filed acreage report to assure that the information agrees. Notify your insurance agent immediately of any discrepancies.

Damaged Small Grain: Damp rainy weather in May caused concern about disease\toxin concerns in small grain. About 1,300 crop insurance policies are in effect in PA and provide protection against poor grain quality. If you determine that your insured grain may have quality damage, contact your crop insurance agent before you begin to harvest and ask to talk to a crop loss adjuster to determine how to proceed to obtain maximum policy benefits. If your insured grain has poor quality, the insurance company may require**, two tests**, a quality determination by a Federal Grain Inspection Service (FGIS) laboratory **of both** a grain grade and a toxin content (i.e. vomitoxin PPM). Be sure to request **both tests** in communications with FGIS if you have vomitoxin (last year some affected producers got only one of the tests and forfeited the loss payment).

Reporting Requirements if a Loss is Anticipated: The insurance policy requires that **written notice be given to your crop insurance agent** (by crop by farm)**:**

- Within 72 hours of discovery of damage or loss,
- 15 days before harvest begins, and
- Within 15 days after harvesting is completed but not later than10/31.

Gene Gantz,
RMA/USDA,
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Firing on Lower Leaves of Corn

For a couple of reasons, I wouldn't be surprised if we start seeing a lot of "firing" on the bottom of corn plants this year. The two most common nutritional causes of lower leaf firing are nitrogen (N) and potassium (K) deficiencies. While both of these show up on the lower leaves, it is very easy to tell them apart.

Nitrogen deficiency will start as yellowing at the tip of the leaf and then go back the middle of the leaf (Figure 1). Potassium will also start at the tip of the leaf but the yellowing will go down the edge of the leaf. The symptoms will start at the bottom of the plant and go up as the deficiency becomes worse. Eventually they may cover the entire leaf and the leaf may die. Thus, the higher up on the plant symptoms are observed, the worse the deficiency.

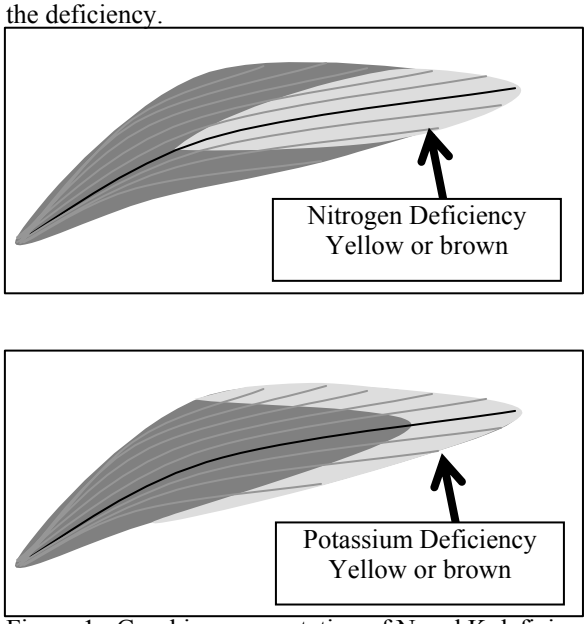

Figure 1. Graphic representation of N and K deficiency.

There are several possible causes for these deficiencies. Most obvious is the lack of N or K in the soil. For N, either not enough was applied or a significant amount may have been lost after application, by leaching and denitrification because of the wet weather pattern.

For K, look at the soil test. If the soil test is low then this is likely the cause of the deficiency. If the soil test is not very recent and K levels were marginal, they could be critically low now, especially following a good crop year like we had last year and/or if high K consuming crops like a hay crop or soybeans preceded the corn. Incomplete starter fertilizers may be a factor. There is not much you can do at this point. Just be sure to apply sufficient K as fertilizer or manure before the next crop.

However, K deficiency can show up even with optimum or high soil test levels. This is usually because the plant is not being able to take up the K that is in the soil. Anything that limits root growth can cause this; compaction, low pH, root injury by herbicides, and root feeding insects. Compaction is a very common cause of

this problem especially sidewall compaction resulting from wet conditions at planting. Again, there is not much we can do about this at this time, but you need to plan on minimizing the problem in the future.

For less obvious symptoms, plant analysis is an excellent tool for diagnosing these problems. Be sure to follow the sampling recommendations from the lab. A good way to determine the problem using plant analysis is to take a sample from the problem area and a similar sample from a nearby normal area and compare the results. Plant analysis kits are available from local Penn State Cooperative Extension offices.
This article is adapted from one originally written by Dr. Doug Beegle, Extension Soil Fertility Specialist.

John Rowehl, CCA
Grain Crops

Forage Establishment Weed Control Options

I recently had the opportunity to discuss with an alfalfa producer his weed control program. I would consider this individual a top producer of high quality and top yielding alfalfa and orchardgrass forages. He highlighted his philosophy of weed management in forage stands.

Steve (not his real name) told me that his first priority is to begin his forage crop weed control program long before establishment. Steve monitors his crop rotations and evolving weed pressures. He does not allow any weed types to become well established. Steve's opinion is that it is easier to control weeds prior to the alfalfa crop. After establishment, Steve's goal is for the forage crop and cutting management to limit weed pressures.

Perennial and bi-annual weeds such as dandelion, milkweed, hemp dogbane, dock, thistles, and quackgrass are much easier to control prior to planting. If not controlled at this time, these weeds will commonly persist throughout the life of the stand. Grassy weeds are considered to have approximately 75% the feed value of alfalfa; woody stemmed weeds, such as those mentioned earlier, are significantly less digestible and lower in protein so control is extremely important.

Steve incorporates a small grain into his rotation for a summer seeding. Steve feels that there is far less weed pressure in a late summer, mid August seeding compared to spring. Following grain and straw harvest, Steve allows the field to re-grow. With adequate summer rains, this regrowth can be fairly quick with summer annuals such as ragweeds and foxtails. Steve wants to see good regrowth on the "priority" weeds that need to re-grow from buds following small grain harvest. This may be 3 to 5 weeks.

When sufficient regrowth is present, Steve uses a glyphosate product at a mid to high rate. Steve's goal is elimination of weeds and he does not feel minimizing rates at this time is economical. This is his best shot for control and he wants to take advantage of it. If dandelions are present, he will add 1 pint of 2,4-D amine/acre to the program. With the addition of 2, 4-D Steve knows he must delay seeding alfalfa or grasses by 14 days. Typically Steve plants his alfalfa with a no-till drill but in some fields he will plow. Even when plowing, Steve will incorporate an herbicide program if too many tough perennial weeds are present.

Summer seedings of alfalfa will have the potential for invasion by winter annual weeds such as chickweed, mustards, henbit, etc. Steve has gained an appreciation for using post emergent products for optimum weed control. For straight seeded alfalfa stands, Pursuit and Raptor have provided excellent control. Steve is careful to wait until the alfalfa has developed at least 2 trifoliate leaves and gets on these fields before the weeds have gotten more than 3 inches tall.

In most cases, this is Steve's herbicide program for the entire alfalfa rotation. Good soil fertility management and timely harvest management contribute to a vigorous alfalfa stand. This stand then is hopefully, able to out-compete most weeds.

Paul H. Craig, CCA
Forages

Weather Dictates Pesticide Success

Here are some suggestions to be sure pesticides do their job depending on the weather conditions.

More than 14 days of dry weather since a rain event:

- Use higher rate of surfactants. If the product calls for NIS or UAN and gives a rate differential, use the higher rate. If the product offers Crop Oil Concentrate as an option, use it in place of NIS.
- Consider product change. Many SU herbicides (Accent, Steadfast, Exceed) will rapidly lose effectiveness during drought conditions (some cases go from 90% control to 50% control in drought versus normal conditions.) Options of systemic herbicides (Clarity, Pursuit, and Round Up) normally perform more consistently in dry conditions.
- With insecticides and hard water, consider adding AMS to the tank to reduce pH. In many cases, this aids the effectiveness of insecticides.

Frequent Rains:

- Use lower rates of surfactants. Stay with NIS option, but use the lower rate option. 1 pint per acre versus 2)

Tall Corn/Beans:

- Raise the boom! When crops are tall, use the height of the crop as the target. This means a typical 80 degree nozzle requiring 18 inches between target and nozzle tip, applied on 15 inch tall corn, would need to be set at 33 inches above the corn. If corn is at canopy, drop nozzles are the rule and will need to be set to the target below the corn.

- In beans, if the beans are 20 inches tall, again the boom needs to be set at 38 inches above the soybeans. If you are dragging weeds in the field….. The boom is too low!

Tank mixing herbicide and insecticides

- Under normal rainfall conditions, reduce surfactants to lower levels when including other tank mix partners. Many insecticides are in liquid form and will aid in penetration, thus lower rates of surfactants are needed. Likewise in dry conditions (14 days of dry weather) leave surfactants at the same level.
- While limited research cites critical output levels….. Going below 15 gallons per acre for contact insecticides and herbicides is risking failure and even with systemic products, it may prove ineffective. The more output the better in many cases. Most labels require 20 gallons per acre, especially targeting potato leafhoppers, spider mites and corn borer. Custom applicators prefer lower rates however if it were my fields, I would kindly demand higher output of solutions.

Del Voight, CCA
Integrated Pest Management

Soil pH 16% below 6.0 in Region

Pennsylvania's soils require regular applications of agricultural limestone to adjust their pH. A favorable pH, 6.2 to 6.8, dissolves mineral plant nutrients, such as N, P, K, Ca, Mg, Mn, Mo, B, Fe, Cu, Zn, in soil solution. Minerals nutrients must be in solution for plants to take them up. When the pH is below 6.2 minerals get tied up and are not as available to plants. Correct pH is essential to good plant nutrition.

I reviewed the Penn State Ag Services Lab soil test reports for the Capital Region. Of all the samples submitted for agronomic crops, 16% tested 5.9 pH or lower. All of these fields are producing lower than optimum yields of crops because of this pH imbalance. Nutritional deficiencies due to pH are not obvious because plants may be symptom less. Nonetheless, the plants suffer from "hidden hunger" that reduces yields.

Percentage of Soil Samples Testing Below pH 6.0	
Adams	28%
Cumberland	15%
Dauphin	22%
Franklin	13%
Lancaster	10%
Lebanon	14%
York	21%

Mark Goodson, CCA
Soils

Capital Region Cooperative Extension Offices

Adams	(717) 334-6271
Cumberland	(717) 240-6500
Dauphin	(717) 921-8803
Franklin	(717) 263-9226
Lancaster	(717) 394-6851
Lebanon	(717) 270-4391
York	(717) 840-7408

Landisville Research and Extension Center, Lancaster County (717) 653-4728

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