



# Agronomy Notes

## Capital Region

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Capital Region Extension Agronomy Team

Mark Goodson, Editor



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### Nutrient Management Regulation Change Update

The State Conservation Commission (SCC) will propose changes to the Pennsylvania Nutrient Management Act regulations. The SCC expected to publish the proposed changes in January 2004 for public comment, but due to recent developments in Harrisburg (i.e. the Governor's veto of HB 1222) the proposal publication date has been delayed. It is unclear at this time when the final proposal will be published.

Unfortunately, the delay will likely result in the public comment period occurring in the spring, a busy time for farmers. Please remember that the proposed changes are coming, that farmers and other stakeholders will have an opportunity to comment. "Stay tuned" for more information over the next few months.

Once the proposed regulations are published in the Pennsylvania Bulletin, there will be a short timeframe (60 days) for public comment. Penn State will have educational resources to get the word out quickly.

All resources will be available on the web at Penn State's Nutrient and Water Policy Web Site <http://agenvpolicy.aers.psu.edu> and the Pennsylvania Nutrient Management Program Interagency Web Site <http://panutrientmgmt.cas.psu.edu>.

### Date Changes

#### Pesticide Ed Dauphin Co.

- Wednesday, March 24 Dauphin County Ag Center, Dauphin PA 7 to 9 PM (2+2)
- Thursday March 25, Nye Elementary School, Hummelstown, PA 7 to 9 PM (2+2)
- Tuesday March 30, Upper Dauphin Area High School Auditorium, Elizabethville, PA 7 to 9 PM (2+2)

### Alfalfa Winter Injury (Part 2)

Recall from last month's article that there is significant risk to alfalfa stands due to the extremely cold weather. Since early January weather has been anything but beneficial for alfalfa. The greatest concern is related to the sudden drop in temperatures from the 60<sup>o</sup>s to -7<sup>o</sup> in 10 days. In addition the lack of snow significantly increased the risk of winter injury. What's a producer to do???

**Injury Factors:** In addition to weather conditions other factors have been identified that have the potential to increase winter injury potential. Forage researchers note that older stands (>3 years) have greater risk to injury. There are significant variety tolerances as well. Most seed companies will rate varieties for winter hardiness. Varieties with better disease resistance will also be better able to tolerate poorer conditions.

Soil fertility plays a major role in winter survival. Fields with low soil pH and/or low levels of potassium (K) have been shown to have greater winter injury from cold temperatures and heaving. Poorly drained soils also increase the risk of injury.

How does harvest management affect winter survival? More frequent cuts, 5>4>3, increases the risk as does a fall harvest. Harvesting in mid September, which allows some re-growth prior to frosts, has more winter injury risks than an early September or mid October harvest. When cutting in the fall, a 6-inch stubble height is preferred.

**Evaluating Stands:** In late March/ early April evaluate your stands. Look for uneven growth from plant crowns, both in location on the crown and in height. The best indicator will be found in the roots. Collect 4 to 6 inch lengths of roots. Healthy roots will be firm and white.

Winter injured will be grayish, possibly brown to black and will be soft, stringy and possibly dry. On severely injured crowns, the top-growth can easily be pulled off.

One method to evaluate stands is based on counting stems per square foot at many locations across the field. Most productive alfalfa stands will have 55 stems/ft<sup>2</sup>. When stem counts are between 40 – 55 stems/ft<sup>2</sup> there will be yield potential losses. At <40 stems/ft<sup>2</sup> significant yield losses will occur and producers should consider replacing the stand.

**Management Considerations for Injured Stands:**

If you decide to retain alfalfa stands with significant winter injury consider the following practices to put some additional vigor back into the stand. First delay harvest to allow weakened plants to replenish carbohydrates needed for future production. How long to delay harvest? This will depend on the extent of injury, less injury, less important. First cut of the most severe stands should be delayed until mid bloom if the stand will be kept in production. With only mild injury you may need to delay harvest to 10 or 25% bloom on 1 or 2 harvests, perhaps only 2<sup>nd</sup> or 3<sup>rd</sup> cut. When delaying harvest be sure to check the crown area for new growth. Removal of these shoots will further weaken the plant.

Be sure to soil test and topdress. Potassium is a critical alfalfa nutrient that is frequently limiting production. Removal rates of 60 lbs/ton need to be replenished. Weed and insect control will also improve alfalfa survival.

What about inter-seeding on the worst stands???

Experience and research has shown that this is not a beneficial practice. Established alfalfa plants produce a toxin that greatly inhibits development of smaller plants. Research has found that the risk remains in fields for 12 months. Rotating to corn will be the best alternative to thin stands.

**Paul H. Craig, CCA**  
**Forage Crops**  
**Dauphin County**

**Additional Crop Insurance Premium Discounts for Most Spring Crops**

PA producers have the benefit of additional crop insurance premium discounts (all details were not available at press time but should be available from crop insurance agents well ahead of the date that you receive this publication). These discounts are the results of one-time special funding that was made available to the PA Dept. of Agriculture and RMA/USDA for this purpose. These discounts are intended to make the higher levels of coverage more affordable, for an increased number of producers, so that they can enjoy higher protection to better manage their production risk exposures.

The 2003 losses paid to producers passed the \$21 million mark in early February. These losses were due primarily to excessive moisture and hail damage. Producers with

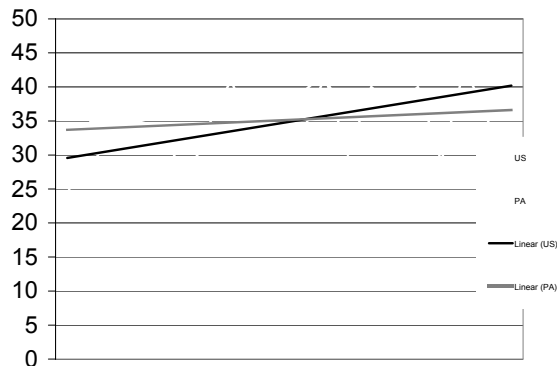
the higher levels of coverage (70-85%) were the most satisfied with the program's performance. The \$21 million of 2003 added to the \$64 million of losses paid primarily for drought in 2002, provided about \$85 million to PA producers to help offset crop losses in just the last two years. The economic impact of these payments is estimated about \$250 million to rural PA communities (using an economic multiplier of 3). Its sad to note that the uninsured producers left almost an equal amount of benefits on the table by choosing not to participate in the crop insurance program.

**Reminder – It Is Time To:** 1. Do a final review to make sure that you have the protection in place that you need on all of your farms and taking full advantage of the 2003 additional premium discounts before 3/15, and 2. Make sure that you have established and updated your yield data bases to include 2003 information for each insurance unit that you will be farming in 2004. Take care of these items with your crop insurance agent.

**Gene Gantz,**  
**RMA/USDA**  
**(717) 497-6398**

**On-Farm Soybean Tests**

Many farmers have made comments in recent years that they don't see an upward trend their soybean yields as much as their corn yields. If we look at a chart of the average soybean yields for PA vs. US from 1983 to 2002, those concerns are valid. The trend line that is more level represents PA, the one with more increase is the US average.



A couple of ideas came up in conversation with some growers and crop advisors to do some testing to work toward improvement of soybean yields.

One idea was that varieties that do well in test plots on limestone soils may not work as well in some areas that have subsoil that is more acidic. To look at this we asked for seed to be submitted by local seed dealers and planted twelve soybean varieties. We planted on these in a field with piedmont (Chester) soils in southeast York County and also on limestone (Hagerstown) soil at the Landisville research farm. If the order of ranking of yield were to be different at the two sites, it would imply that we should expand our variety testing onto different soils. With the



help of the Penn State variety testing crew we completed this test.

In the results we got, the varieties we tested did similarly enough at both locations that the test did not confirm any interaction between the yield rank and location.

Another idea was that perhaps the fertility management that farmers have been following for soybeans is not adequate for high yields. Using the same field as the variety test we soil tested and set up a fertilizer trial to try out the recommended rates of nutrients, twice and three times the recommended rate. The soil test results showed pH at optimum, phosphorus at optimum and potassium need at 60 lbs. K<sub>2</sub>O per acre. Since fertility levels were already pretty good, I decided to fertilize at the crop nutrient removal rate for 70 bu/ac. soybeans; 70 lbs. phosphorus, 80 lbs. potash and then combinations of 2X and 3X the rate.

Our cooperating farmer applied the recommended potash before planting so our rates ended up as follows.

Treatment	Yield
0P 1K	56.0
0P 2K	56.6
1P 1K	56.4
1P 2K	58.1
1P 3K	55.5
2P 1K	56.0
2P 2K	57.8
<b>MEAN</b>	<b>56.6</b>

As you can see in the results, we got no response from the applied fertilizer. I feel very confident in our results. First, the statistical analysis showed it was very low in variability between plots. Secondly, the variety we used for the fertilizer test was one we had in the variety test. The mean yield of the plots was almost exactly the same yield that the variety had in the other test in the same field. Contact me if you would like to see a more complete report.

These test results support the recommendations you get from our soil testing lab. So if you are soil testing and fertilizing accordingly, fertilizer should not be a limiting factor.

**John Rowehl, CCA  
Grain Crops  
Cumberland County**

## Seed Treatment Considerations

Farmer applied seed treatments utilizing Diazinon/Lindane (DL) Formulations will be unavailable as of Nov 2005 (cancelled Nov 2003). These products

include Agrox DL Plus, Agrox Premiere, Kernel Guard, KickStart, Germate Plus and Diazinon 50W. With the removal of these products input suppliers have expanded commercially applied treatments that will be more effective and also reduced handler exposure. Here is a partial list of products:

- **Gaucha 600 (imidacloprid)** : 0.16 mg ai/seed = Gaucha and 1.34 mg ai/seed = Prescribe
- **Cruiser 5FS (thiamethoxam)**: 0.125 mg = secondary pest rate; 1.25 mg/seed = rootworm rate
- **Poncho 600 (clothianidin)**: Poncho 250 = 0.25 mg ai/seed; Poncho 1250 = 1.25 mg ai/seed

**Note:** Each will be available in a low rate and high rate where soybean or wheat to corn is planned the low rates are targeted while with corn to corn rotations the high rates are of use. How do they stack up to standard treatments specific to insects of concern? Here are some comments by Dr. Joanne Whalen of the University of Delaware.

### Rootworms

- One Year Crop Rotation Still Works: no variants or extended diapause so far
- Soil Insecticides Still Do a Good Job
- Cruiser - 1.25 mg/kernel (high rate) -- light to moderate populations of rootworms only (1-2 year rotations of corn).
- Poncho 1250 - 1.25 mg ai/kernel -- rootworm control similar to soil insecticides

### Wireworms

- Seed Treatments doing better than soil insecticides with high pressure
- Seed treatment label states seed protection and early season seedling protection
- Gaucha generally not lasting as long
- Cruiser (lower rate- .125 mg/kernel) and Poncho 250 similar
- Gaucha + KernelGuard – some advantage in 2003 ; Did not see it with Cruiser

### Grubs

- Counter and Force still providing good grub control - have longest data history
- Growers can get good grub control with Cruiser and Poncho 250 - seed and early seedling protection; ? High pressure – not enough data

### Seed Maggots

- Any soil insecticide or seed treatment generally works
- Caution – extremely wet and heavy organic matter/manure – multiple control strategies needed – Gaucha has failed under these conditions.

### Cutworms

- Pyrethroids tank mixed with herbicides still working ( true armyworm);
- Cruiser –only provide cutworm suppression at rates being used - not claiming control
- Poncho 250 -- fair to good cutworm control depending on trial/worm size
- Poncho 1250 -- good- very good cutworm control

**Considerations with new seed treatments**

- Remember -- Soil Insect Control Generally 80-90 % -- never complete especially under high pressure
- New Seed Treatments May or May not Give Same Control as Old Products -- knowledge of insect pressure is key on a field by field basis
- Labels for Seed Treatments State Seed and Seedling Protection

Use these new technologies wisely. Most will be priced to standard treatments and expect the costs to be reflected in the price of the seed. Plant treated seed first and do not plan to return seed. There are some germination problems associated with held over seed. These seed treatments also are targeted to be used in combination with Corn Rootworm Bt since the event only provides rootworm control the seed treatments will protect the seed against other insect pests.

**Del Voight, CCA  
Integrated Pest Management  
Lebanon County**

**Transition to No-till Incentives**

The Environmental Quality Incentives Program (EQIP) is a voluntary program authorized by the 2002 "Farm Bill" to provide assistance to farmers who face threats to soil, water, air and related natural resources on their land. Through EQIP, the Natural Resources Conservation Service (NRCS) provides assistance to agricultural producers in a manner that will promote agricultural production and environmental quality as compatible goals, optimize environmental benefits, and help farmers meet environmental requirements.

**Conversion to No-Till** Farmers may apply for EQIP technical & financial assistance at any time at any USDA Service Center or NRCS Field Office. The conversion to no-till option is intended for the conversion of cropping systems to continuous long term no-till planting of all crops. Slit till or zone till is considered a form of no-till. This option is intended for producers who have never done no-till or who are mixing tillage systems where no-till is 50% or less of the current tillage system.

**Requirements**

- A cover crop must be planted following silage corn.

- Must use continuous no-till on all crops for 3 consecutive years.
- Planned rotation must be for at least 3 consecutive years.
- Maximum of 50 acres can be enrolled per participant. Applications will be ranked based on several factors including environmental benefits and cost effectiveness.

**Conservation Practices that may be cost shared**

- Crop Scouting/nutrient management planning: c/s to be determined
- Deep tillage, if needed: approx \$20/ac
- No till planting or strip/zone till planting: approx \$15/ac
- Cover crop: approx \$15/ac
- Conservation Crop Rotation: approx \$5/ac
- Manure injection: approx \$15/ac

This represents preliminary information and is not intended to be a definitive interpretation of farm legislation. Visit the Web at: <http://www.usda.gov/farmbill>

**Wes Gordon, NRCS Greensburg  
Joel Myers, NRCS, Harrisburg**

**Sincerely,**



**Mark Goodson, CCA  
Extension Educator, Agronomy  
York County**

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