

Agronomy Notes

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Capital Region Extension Agronomy Team



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Poisonous Plants in Pastures

Frequent calls are made to Extension offices during the growing season asking for assistance with poisonous plant identification and the investigation of livestock and horse poisonings. In most instances, the affected livestock does not die. Unfortunately, that is not always the case.

Animals cannot protect themselves from poisonous plants. It is up to the farmer to prevent poisonings by becoming familiar with plants that are poisonous and to practice good pasture management.

There are several different naturally occurring compounds in some plants that are capable of poisoning horses and other livestock. Alkaloids are found in plants in the Nightshade family and Glycosides are the compound found in sudangrass and wild cherry trees that will poison animals. The affects of poisonous plants can range from a mild irritation, to sickness and even death.

Specific symptoms of poisoning vary by plant and animal species. They can include vomiting; diarrhea; convulsions; respiratory failure; lethargy; muscular weakness; discoloration of the gums and lips; salivation and many other abnormal conditions. In addition to varied symptoms of poisoning, different plant parts can be poisonous while other parts from the same plant are not. All these factors make diagnosis of plant poisoning very difficult.

The severity of poisoning to the animal is dependent upon the degree of plant toxicity, the amount consumed and the age, type and condition of the animal. Poisoning can result from a single feeding (acute poisoning) or following repeated or long term exposure to the plant (chronic poisoning).

Typically, if good quality forage is plentiful in a pasture, most animals will avoid poisonous plants. The same compounds that produce the poisonous affect usually provide an unpalatable taste, causing animals to avoid them. During late summer or a drought, animals will often seek out these plants, which seem to survive in unfavorable conditions after the pasture species have stopped growing. But some poisonous plants, such as wilted cherry leaves, are highly palatable and are favored by animals.

The best way to minimize poisonous plants is to practice good pasture management and to be aware of different poisonous plants common to PA. Promoting abundant quantities of desirable forage grasses and legumes comes from a program of sound agronomic management of pastures. These practices include: soil testing; lime and fertility additions; overseeding or renovation; frequent clipping; grazing management and weed control programs. Most poisonous plants are broadleaf weeds or woody species. These plants are easily controlled with timely applications of selective herbicides but they will also eliminate any desirable legumes in your pastures.

There are many publications available that can help identify plant species in pastures. Unfortunately, there are no specific guides for poisonous plants in PA. An excellent reference source is available on the web at Cornell University called "The Poisonous Plants Page". It can be found at www.ansci.cornell.edu/plants/plants.html

Other sources of poisonous plant related information can be found with a Google search for "poisonous plants".

Paul H. Craig, CCA
Forages - Dauphin Co.

Crop Insurance Update

Production Data Reporting Deadline

The foundation for your protection in most crop insurance policies is your actual yield history. It is critical that yields for each insurance unit are reported to your insurance agent **before the April 29 deadline**. Your required written records that support your reported yields are subject to review to ensure accuracy. Also, be sure to tell your agent of any additional farms where you will be growing insured crops and do NOT have a yield history established.

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A detailed record system that meets RMA/USDA standards is available at cropins.aers.psu.edu. The guide contains methods for calculating bushels/tons of farm-stored production. Don't forget to apply "pack factors" to farm stored grains which increase the number bushels. The factors are also available at the website.

Report Crop Damage Promptly

If you suffer winterkill damage on insured winter wheat or barley, be sure to file a report of damage with your insurance agent immediately upon discovery (ask agent for copy of the damage report to the insurance company, for your records). DO NOT destroy the evidence of winterkill damage until authorized in writing by a loss adjuster.

Crop Insurance is Good Foundation for Pre-harvest Crop Marketing

You can put your 2007 crop insurance protection to work to secure your credit (assignment of loss proceeds) and as the foundation of your crop marketing program. Most experts agree the yield on which your guarantee is based is the least risky bushels for pre-harvest crop pricing. CRC February prices of \$4.06/bu. for corn and \$8.09 for soybeans are strong. But there is no assurance that they will be available at harvest time. With 2007 price volatility estimated at 2X normal, it is important to have a written marketing plan and follow it to ensure good profits from your potentially record value crops.



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No-till Pest Management Update

What will 2007 bring in the way of pests? How will management of weeds, insect and diseases differ?

Alfalfa

The first check this spring should be in your fields of established alfalfa. If chickweed is present, which is almost a certainty this year, you have two options. You can do nothing except harvest early, thus physically removing the weeds while their quality is still ideal. The other option is to apply a herbicide listed in the Penn State Agronomy Guide to eradicate it. The key is to apply the product before new growth exceeds 2 inches for most herbicides.

This is also a good time to evaluate older stands. If there are not 40 stems per square foot, 4 whole plants per square foot, or if the stand is older than 4 years, rotate into corn. If you decide to kill the field and no-till corn, utilize Hornet, Stinger, or Banvel along with glyphosate to ensure a clean field.

Small Grains

I anticipate heavy winter annual pressure this spring. If so, an application of herbicide may be economical to apply. Again, check the Agronomy Guide for specific herbicides. In some cases, applying herbicide along with top-dress N as labeled saves a trip across the field.

Soybeans

Glyphosate continues to work well but relying on a one pass system has some disadvantages. In some cases a pre-emergent product should be used in combination with glyphosate to ensure adequate control. Sencor, Prowl, Canopy EX orXL, Authority One and numerous others are examples of labeled preplant products and should be considered in a two pass system. Using a residual herbicide is particularly important for the control of nightshade. In no-till soybeans, consider using 2,4-D in the burn down to ensure horseweed control.

Corn

In my opinion, selection of specialty corn (and soybeans) traits and seed treatments should be used only where the varieties' agronomic traits are equal to or better than traditional varieties. For example, do not buy a product just because of the herbicide selection trait, unless the weed spectrum dictates. It is also important to remember that the timing of post products is crucial. Plan to apply most post-emergence products by the time the weed height is no smaller than 2 inches and no more than 6 inches.

Insects

Insect threats need to be determined field by field. The process is not difficult, but can be confusing. Consult your Agronomy Guide for specifics on insect pests, spray thresholds and product effectiveness. For example, if you are planting corn after corn, then using a rootworm insecticide is a necessity- not a choice. On the other hand, if you rotate out of soybeans, then insecticide is not needed for root worms.

When planting corn into an old sod or rye cover, insecticides should be used due to the increased likelihood of pests such as cutworms, wireworms and armyworms. The most important step in insect monitoring (and really any pest management system) is to get into the field and look for signs of problems. Perhaps you can't determine the exact cause but you will be able to recognize that a problem is developing. At that point, you can ask an Extension or industry representatives for assistance. It's best to check fields once a week until the crop canopies and then once every two weeks until harvest.

If a field planned for no-till is thick with chickweed or is in a cover crop, identify that field as a risk for cutworms and/or armyworms and manage accordingly. Inclusion of an insecticide with your burn-down material is an attractive option, particularly with small grain cover. I was in several fields last spring where half the stand had been lost to seed corn maggots. To avoid this, be sure to include a seed treatment such as Poncho or Cruiser.

You should have already begun scouting for weevils in alfalfa. Also, don't forget to check timothy fields for mites. The Timothy Mite is a relatively new pest and has caught many growers off guard. Applying Sevin XLR when mites are discovered will ensure control of the pest.

Disease

Two critical components of disease management are selecting resistant varieties and practicing crop rotation. If diseases are to blame for poor crop performance, it is vital to have the disease identified by a specialist. This may include sending the specimen to a diagnostic lab. Penn State offers both a pathology lab for plant diseases and an insect lab to identify pests. Take advantage of these free services to identify what is affecting your crops and plan a management system.

Last season, there was excessive stalk rot in corn. I expect it will be of concern again this year. It will be particularly important where soil potassium (K+) levels are less than optimum, which causes weakness in plants and can cause increased disease. There were also many fields stricken with seedling blights. Research in Wisconsin has shown a significant increase in plant populations with the use of seed treatments containing Captan/Maxim or Maxim/Apron when applied as a planter box treatment. If you plan to plant early, don't leave out this vital step.

Finally, Septoria leaf blight was widespread last year, so growers need to be scouting wheat fields to prevent potentially heavy losses associated with this pathogen. If the disease progresses to within three leaves of the top of the plant, a spray application of a fungicide will prevent yield loss.

**Del Voight
IPM - Lebanon Co.**

Burning Down Cover Crops

Cover crops can serve various useful purposes but there comes a time when they must be killed. Failing to do the job thoroughly can result in a field full of a potentially competitive weed (the cover crop itself) that wipes out all advantages of using it to begin with.

Timing is important. As cover crops grow, they utilize moisture that may be critical in a dry spring. Covers with excessive growth may pose planter seed placement problems. Small grain cover crops, such as winter rye, are often easier to kill with herbicides or tillage while small and in the vegetative stage of development. As the size of the cover crop or weed increases, herbicide rates need to be increased. Generally, killing the cover one to two weeks before planting will insure adequate "dry-down" of the plant material prior to entering the field with the planter or drill.

The date of burndown for legume covers is a balancing act if it was planted for the purpose of making nitrogen for a crop like corn. The longer it is left to grow in the spring until bloom, the more nitrogen it will make. This compromises corn planting dates in most cases. So it makes sense to leave these fields for the end of your corn planting season. Control of legume cover crops with glyphosate alone is not as effective as when 2,4-D is added to it (Banvel/Clarity is another option, only if corn will be planted).

If you have major problems with dandelion in a field, this is another situation where 2,4-D increases control over glyphosate alone. A recent study of spring applications in PA shows the best dandelion control occurs when this combination is applied in full yellow bloom (typically in early May). As is the case with most perennial weeds, the study also showed that fall applications were more effective on dandelion than in the spring.

Glyphosate resistant horseweed, a.k.a. marehail, has been found in several places in PA, so no-till soybean growers must be prepared deal with it. There are a couple of resistance management options to use. Once again, the addition of 2,4-D will be useful because it is very effective on young horseweed. Another option is to use Gramoxone for burndown, which is effective on horseweed when it is still small. 2,4-D LV ester can be added to Gramoxone but its effectiveness will decrease if conditions are good for Gramoxone to work rapidly (bright sun, warm temperatures) and short circuit the absorption of 2,4-D.

Anytime you use 2,4-D for burndown ahead of soybeans, closely follow label instructions for the time interval before planting. Always use caution when using 2,4-D near sensitive crops, neighboring landscape plants or greenhouses.

John Rowehl, CCA

SPRING

Additional Tips for Using Burndown Herbicides

By Dr. Bill Curran, Extension Weed Specialist

- Do not apply either glyphosate or Gramoxone unless daytime temperatures exceed 55-60°F.
- The higher the temperature the better.
- Cold nights (<40°F) will reduce activity, particularly for glyphosate.
- Sunny weather is important for Gramoxone as sun causes greater plant activity
- Be sure to include AMS at 8.5 to 17 lb/100 gal or equivalent with glyphosate and add a good quality NIS at a 0.25% v/v to Gramoxone. Of course, if the glyphosate doesn't come fully loaded, add good quality NIS as well.
- Nitrogen solutions (UAN) may be used as the carrier with either herbicide. UAN can increase Gramoxone activity and **reduce** glyphosate activity (especially for perennials and difficult to control weeds).
- Tank mixing a triazine such as atrazine with Gramoxone increases the activity; tank mixing any other herbicide and especially a clay-based herbicide (DF, F, WP) reduces glyphosate activity. You can overcome the antagonism by increasing the glyphosate rate by 20 to 25%. Adding AMS also reduces the antagonism.
- Use flat fan tips with both (not floods) and apply Gramoxone at a minimum of 20 GPA. Tip selection is less important with glyphosate than Gramoxone.
- Spraying in late afternoon is not as effective as mid morning.
- Finally, spray weeds that are actively growing and the smaller, the better for annuals.

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