

Soybean Cyst Nematodes, Still a Major Pest of Soybeans in Missouri

Soybean cyst nematodes (SCN) continue to cost Missouri producers millions of dollars a year. Surveys show that about 75 percent of the Missouri fields have SCN. Since a field may have 30 percent yield loss while showing no above-ground symptoms, without testing, producers may not realize they have a problem. The nematodes damage the roots, causing the plants to be stunted and, in severe cases, show potassium deficiency. Potassium deficiency exhibits as yellowing along the leaf edges.

Fields can be tested by sampling as you would for a soil test. Here are a few tips for sampling for SCN:



1. Limit the size of the area being sampled: 10 - 20 acres is a good target.
2. Using a bucket and probe or shovel, walk the area in a W or Z pattern, sampling about 8 inches deep in the root zone between the rows. Take about 20 cores (with a shovel take ¼ cup of soil from near the shovel tip). Mix the cores well into a composite sample and bag about a pint of the soil for submission. *Do not let the samples dry out! Nematodes are sensitive to heat. Do not leave samples in the sun or other areas of high temperature.*
3. Label the plastic bag and ship it as soon as possible.
4. Fill out a submission form (available from our website or your local extension agent) or on a piece of paper indicate:
 - a. Name, address, phone, and email (if you have e-mail, results can be sent quickly)
 - b. County and cropping history
 - c. Type of test: SCN egg count (\$20), modified HG type test \$75;
 - d. The mailing address for the lab is:
Plant Nematology Lab, 23 Mumford Hall, University of Missouri
Columbia, MO 65211

Most of the soybean varieties in Missouri have the same source of resistance to the nematode. This has resulted in the resistance not working very well in some cases. If producers can't rotate sources of resistance, they should at least rotate varieties. Besides using resistant varieties, growers can rotate to non-host crops such as grasses, alfalfa, corn and grain sorghum. Some preliminary research has indicated that cereal rye as a cover crop can help reduce SCN egg numbers.

Several new seed treatment products have been released for SCN control. However, at this point, Missouri research has not indicated significant control from these products. For more information about testing your soil for nematodes, contact your local University of Missouri Extension Center.

Source: Pat Miller, Agronomy Specialist

Evaluate Your Recent Winter Feeding Season

Grass is growing again! We are ready to put the winter feeding season behind us and get on with the growing season. But before we get too far from this winter season, it is an excellent time to evaluate how it went.

Are you happy with your winter program? Did the hay you fed provide the energy your herd needed? Did you need to supplement more for having lower quality hay? Some things like the weather last spring are difficult to change. I wanted to share an example of how stockpiling winter grass (fall growth) compares to baling summer grass for feeding in the winter.

Stockpiling is essentially letting the grass grow in the fall without grazing it until after all the other grass has quit growing for the winter. There is more to it though. If you begin saving fall growth for grazing later in the year without changing other parts of your system stockpile grazing requires more land area.

Some unpublished research from the University of Missouri Forage System Research Center (FSRC) in the 1990's showed that winter stockpiling required about 50 percent more pasture area than what was grazed during the growing season. The studies looked at grazing intensity as well as winter feeding so the most intensively grazed systems didn't require more physical area. But the winter stockpile system still required half the area of the growing season (summer) feeding area.

To really use winter stockpile forage effectively, it must be strip grazed with electric fence. The cows should have access to just what they need each day, or they will trample the dormant grass down and it won't last as long.

Stockpiling requires more land, but baling and fertilizer costs with stockpiling are lower (less fertility removed). Those are the tradeoffs. It may be that fuel and fertilizer are cheaper than land rent, or it may be that additional pasture land isn't available to rent. To add stockpiling to your existing system without expanding available land may require intensification of grazing management or feeding fewer animals.

Based on this information it is easy to assign some costs for hay and stockpile systems based on dry matter consumption per day and yield assumptions. The chart below compares the cost of raised hay per head per day for feeding the cow for 120 days, purchasing hay

for 120 days, and raising hay for 30 days (on surplus spring growth) and stockpiling for 90 days. The exact numbers in this example are not as important as the relative difference in costs between practices.

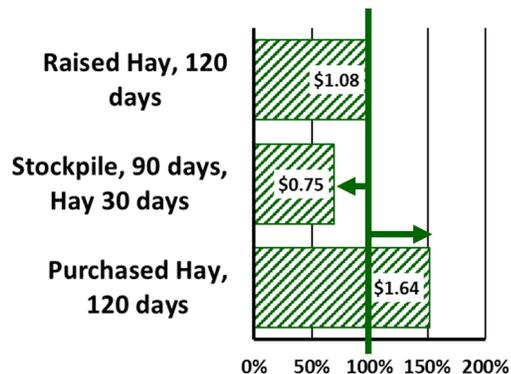


Figure 1 Relative winter feeding costs of raised hay, stockpile/hay, and purchased hay, \$/head/day

In this example, raised hay calculated out to about a dollar per head per day (\$1.08/hd/day). A dollar per day per head is a common rule of thumb and a reasonable reference point. The purchased hay costs 50 percent more (\$1.64/hd/day) than the raised hay. The winter stockpile costs were 25 percent lower than the raised hay costs. There is a barn-full of reasons this example may not represent your situation, but the cost comparisons between systems are pretty reasonable in this simple example.

Pasture rent was set at \$40/acre and included 60 percent more land area (rent) for the stockpile examples. The price of a \$1,000 lb bale of hay was \$35/bale. The cost of equipment and fertilizer per bale was \$25/bale. Every cow consumed 80 percent of the 30 lbs per day dry matter delivered, but the hay consumption also suffered an additional 20 percent wastage loss.

The point here is that this is a good time to evaluate your winter systems. Stockpiling may not help your operation, it is simply an example that there are alternatives and winter feeding is a critical component of grazing systems. Stockpiling, like other alternatives, will require some long-run planning to establish.

Source: Mark Jenner, Ag Business Specialist

Fly Control Methods

Spring is now here both on the calendar and as signaled by the signs of nature. The pastures and wheat fields are greening up and growing, trees are blooming and leafing out, spring born calves are hitting the ground, and the flies are swarming...

Flies cause a good deal of losses to cattle producers each year in several ways. They spread blood borne diseases such as anaplasmosis, can help carry pink eye from one animal to another and are an all-around nuisance to cattle and humans alike. People and livestock have been entangled in a never ending battle with the pesky little creatures since the dawn of days. They are quite resilient and adaptable making them impossible to completely eradicate, however, science has come up with a few products to give us a leg up in the battle against flies, reduce the impact on the pocket book and the distress level our cattle go through because of them.

There are several species of flies that bother cattle, however, most problems are associated with three types, 1) Horn Flies are a small fly, only about half the size of a common house fly but they cause millions of dollars in losses to cattle producers each year. They tend to congregate over the back and shoulders of cattle leaving only occasionally to lay eggs in manure piles. Their economic threshold level for horn flies is 200 per mature animal. 2) Face Flies congregate on the face of cattle, surviving by sucking on the secretions of the eyes, nose and mouth of cattle; because of this, they are common transmitters of pink eye from one animal to another. 3) Stable are a piercing blood sucking fly much like the horn fly however they are closer to the size of house flies and have an economic threshold level of only 5 per front leg. Several studies have shown that at a level of only 5 stable flies per front leg, is great enough to cause a reduction in feed efficiency that would cost \$8.51 over the course of the fly season.

Several topically applied compounds have been readily used for fly control in barns and on livestock for decades now. They are sold under a wide array of tradenames and have been formulated for use by several methods. Most fall into two broad families of insecticides, pyrethroids and organophosphates. One of the first application methods used was "dusting" where a powder form of insecticide was either placed in a hanging bag in a high traffic area where cattle would commonly come in contact with it dusting the insecticide onto them or applied using some sort of duster directly to the animal. Much like the dust bags, liquid solutions are available that are mixed with some sort of oil and soaked into a large sock like back rubber to apply the insecticide to the cattle. Using secondary hang down cloth or fly bullets will increase the effectiveness of the rubbers on face flies. Both dust and liquid soaked applicators can combat face and horn flies well if placed in high traffic areas such as hanging on mineral feeders or over water tanks. Another commonly used topical method of fly control is with various spray applications. Spray applications can be effective; however, it can be labor and time consuming to get an adequate amount of insecticide on every animal in the herd. Compounding this is the fact that spray on alternatives tend to be relatively short lived and must be reapplied fairly often through the season.



Another option that has been around for several years now are ear tags treated with insecticides to reduce the fly load on the animal. Most fly tag manufacturers recommend having a tag in both ears on mature cattle and one ear on smaller calves. The tags have a life of 3-5 months and do a fairly good job of keeping flies away. Like topical treatments, fly tags generally use either organophosphates or pyrethroid compounds to keep flies at bay. Fly resistance to all of the topically applied and ear tag options can and will become an issue. Because of this, it is recommended to switch up classes of insecticide from time to time to reduce the likelihood of resistance issues. With tags, it is advisable to cut the tags out and discard them as soon as a decline in their performance is seen to keep resistance at bay.

Pour on treatments are an available option that control flies and other external parasites with labeled effective control ranging from a matter of weeks to full season long treatment with one application. Most of the chemicals labeled for pour on application are members of the pyrethroid family of insecticide, similar to spray applications; they do however tend to have a little longer life span than spray on methods. For those of you using a spring parasite control method such as ivermectin, you get the added benefit of fly control for up to a month depending on application timing and weather conditions.

Over the last decade, feed through options that control flies by way of interrupting egg production in manure have gained traction in the fly control market share. These products are often labeled as IGR or Insect Growth Regulator on a feed tag. The most common for cattle on pasture is S-methoprene sold under the name Altosid. Altosid is labeled for the control of horn flies but not face flies. Another IGR product available, diflubenzuron, controls both horn and face flies.

Diflubenzuron is available as a feed additive form as well as a slow release bolus. IGR products have proven quite useful as there hasn't been any reported incidence of fly resistance yet. For most effective results, the product must be used beginning 30 days before fly season begins until 30 days after the first killing frost in the fall. This normally equates to a period starting mid-March and going through mid-November. IGR products are as simple as purchasing and using mineral or lick blocks with the product in them and are quite effective at controlling flies, they do have the drawback of only controlling flies in the area where the products are used. In order to reduce fly pressure from surrounding herds, try and keep close contact to a minimum as much of the time as possible.

When selecting fly control methods, there are several factors to consider. For effective control year after year, a long term plan involving several different methods and product types is necessary. Even in the same year, rotation of insecticide classes can become a necessary precaution to prevent resistance to any one product type. Unfortunately, there is no silver bullet cure all products that be 100% effective in every situation. Using multiple products and application methods continues to provide the best results.

Source: *Andy McCorkill, Livestock Specialist*

MU Extension updates free ID Weeds app

University of Missouri Extension recently released an update for its free ID Weeds app for iPhones, iPads and Android devices to help people easily identify weeds in the field, lawn or garden.

The update includes new graphics and is more user friendly than the initial version. The app offers information on more than 430 weed species found in crop fields, pastures, lawns, gardens or aquatic areas in Missouri and surrounding states.

ID Weeds lets users thin down the list of potential weed species with a series of illustrations and drop-down boxes for various plant characteristics. The user chooses characteristics to identify the weed. Detailed information and one or more photographs help the user narrow the choices. You also can find a weed by searching for its common or scientific name, or select from an alphabetical list of all weeds contained in the app.

Proper identification of weeds is important so that you choose an appropriate and cost-effective method of control.

ID Weeds is compatible with iPhone, iPod Touch and iPad running iOS 6.0 or later, and devices running Android 4.0 or later.

To download:

For iPhone and other iOS devices: appstore.com/idweeds

For Android devices: Search for “ID Weeds” at play.google.com.



A web version is available at weedID.missouri.edu.
MU Plant Protection Programs: ppp.missouri.edu.

Source: *Kevin Bradley, MU Extension State Weed Science Specialist*