



# KENTUCKY PEST NEWS

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A relatively mild winter and some warm days cause us to begin to think about this key first cutting pest.

**WARRIOR INSECTICIDE LABELED FOR ALFALFA**

Warrior 1E is now labeled for control of a variety of alfalfa insect pests as the result of a supplemental label granted to Zeneca recently by the EPA. The rate for the alfalfa weevil is 2.5 to 3.84 fl oz per acre, the rate for the potato leafhopper is 1.92 to 3.20 fl oz per acre. These are the key pests of the crop in Kentucky. Harvest intervals are 1 day for forage and 7 days for hay.

Warrior, a synthetic pyrethroid insecticide, is a Restricted Use pesticide due to toxicity to fish and other aquatic organisms. (Zeneca Ag Products)

**EARLY WEEVIL DEGREE DAY ACCUMULATIONS UP**

**By Lee Townsend**

Degree day accumulations (base 48° F) are important in anticipating alfalfa weevil development. The accumulation of 190 degree days (beginning Jan 1) is the time when we can look for the first signs of feeding activity in alfalfa tips. By this point, some of the fall-laid eggs are beginning to hatch.

**Degree day accumulations as of February 19**

Location	1998	1997	1996	1995	1994
Nashville	114	124	67	84	78
Glasgow	124	112	59	85	46
Princeton	110	110	69	67	41
Lexington	73	63	28	48	28
Jackson	90	77	37	59	30
Covington	57	39	19	39	21

1994-96 accumulations (table above) are more typical of seasonal weather. Obviously, the 1997-87 accumulations are similar and higher than normal. If this trend holds we can expect some feeding damage to appear earlier than normal this spring. A few days of a cold snap easily can put us back on a more normal schedule.

Keeping track of degree days over the next few weeks will be important in preventing surprises from alfalfa weevils. It is a mistake to treat too early- especially at the first sign of feeding in a field. Most of our potential feeding damage comes from spring-laid eggs that will hatch considerably later

than those laid in the fall. Follow the degree day charts and use the 30 stem sampling technique for accurate decision-making information.

When appropriate, grazing will reduce alfalfa weevil numbers by removing both eggs and stems used for egg-laying. This may be sufficient to keep weevil numbers below damaging levels.

## **SCLEROTINIA CROWN AND STEM ROT OF ALFALFA IN WESTERN KENTUCKY** **by Paul Vincelli**

Several cases of *Sclerotinia* crown and stem rot in alfalfa seeded last fall have been diagnosed in western Kentucky. This disease, caused by the fungus *Sclerotinia trifoliorum*, is the most serious limitation to the use of fall seeding of alfalfa.

### **Current Occurrence**

Cases have been confirmed in the Purchase and Mammoth Cave Extension Areas. I anticipate that the disease will be present in the Pennyrite Extension Area and perhaps elsewhere in western Kentucky. As far as central Kentucky, I am not expecting much damage from the disease. The reason: ongoing surveys have shown that numbers of apothecia (spore-producing fruiting structures), at least in Bluegrass Extension Area even during the period when apothecia are normally abundant. This is a status report, however, and the situation may change as we continue our field monitoring.

### **Symptoms**

Symptoms in cases thus far have included yellowing, wilting, and browning of randomly scattered plants throughout the planting. These symptoms are typical of ongoing infections, so these fields will probably continue to experience disease development for several more weeks. If weather remains generally cool and wet, disease development could continue for another as long as 6-8 weeks. Sustained periods of warm, dry weather will arrest the disease.

In contrast to the symptoms being reported thus far, the disease does sometimes cause complete or nearly complete death of plants. In other words, alfalfa seeded last fall may simply fail to green up. For stands that were lush and vigorous going into winter and then died during winter, *Sclerotinia* crown and stem rot is the most likely culprit (although not the only culprit).

Look for fungal survival bodies called "sclerotia" to

diagnose this disease. The sclerotia look like tiny black pebbles about 1/16 to 1/8 inch in size, with a white or gray center. They can be found attached to dead plants. If plants have been rotted away, the sclerotia will be scattered about on the soil surface where plants once were present.

### **Management Issues**

There is no rescue fungicide treatment for these outbreaks. There are serious concerns over label issues and illegal residues. In addition, studies have shown that little to no economic effect can be expected with fungicide applications made this late in disease development.

If 95% or more of the stand is completely dead at this time, the disease has run its course. If this is the case, reseeding now is an acceptable option. The fungus is dormant, and there hasn't been enough time for buildup of autotoxicity factors in the soil.

If much of the stand is still alive, a wait-and-see attitude is needed. Plants that are infected but still appear healthy today will turn yellow, wilt, and die over the next few weeks. In this case, reseeding with alfalfa is risky, depending on how much cool, wet weather occurs during that period. The fungus may move from the dying plants to the new seedlings, killing those also. Besides, if the stand has enough alfalfa remaining to justify cutting on schedule, those young seedlings will be at risk from being harvested too early. The UK Extension Forage Program considers 40 stems (not *plants*, but *stems*) per square foot to be a minimum number for a productive alfalfa stand. Consider reseeding only if there is so much stand loss during the next 4-6 weeks that substantial areas of the field are below this value. If reseeding, western Kentucky producers should wait another six to eight weeks in order to let disease activity subside, and allow the new seeding 70 to 90 days of growth before the first harvest.

Although several alfalfa varieties are marketed as having partial resistance to this disease, such as Cimarron VR and WL 332SR, the level of resistance in these is inadequate for most circumstances in Kentucky. An overview of this issue--the lack of adequate resistance in alfalfa to *Sclerotinia* crown and stem rot--will be the subject of a presentation this week at the National Alfalfa Symposium in Bowling Green, Kentucky. If reseeding, there is no particular advantage to using these varieties.

Growers with crops sustaining outbreaks of this disease should take this opportunity to determine which fields are showing the problem. This will help them identify fields in which to avoid fall seeding in the future. The Extension publication *Risk Factors for Sclerotinia Crown and Stem Rot in Fall-seeded Alfalfa* (PPFS-AG-F-2) has more information on the disease.

## **TOBACCO**

### **STATUS OF ACROBAT MZ by William Nesmith**

Why is Acrobat MZ not a current option for blue mold control in greenhouses and plant beds? This has been a common question following the recent article in Kentucky Pest News about “1998 Chemical Controls for Diseases in Transplant Production”.

The bottom line is that Acrobat MZ is not labeled currently for use on any crop in the United States. Use of Acrobat MZ on tobacco for blue mold control in Kentucky was authorized under an Emergency Exemption, which expired on September 30, 1997. Therefore, currently, it is not legal to recommend the use of Acrobat MZ or to use this product on tobacco in Kentucky. The only legal option at this time is to obtain another Emergency Exemption - Section 18. The chances are very good that approval will be obtained, based on the past record and current review status of national labeling efforts on food crops, but approval is not automatic. However, timing of approval for Acrobat MZ under and Emergency Exemption will be dependent upon whether a real threat develops from metalaxyl-resistant blue mold.

At present, blue mold has not been detected in the US. Thus, the national effort will focus on monitoring blue mold's development, delaying build-up of the disease in the south, and reducing the potential of moving it north on transplants. With these priorities, it is possible that some southern states will receive approval of use prior to Kentucky.

The Commonwealth of Kentucky is preparing a Section 18 application for submission to EPA for use of Acrobat MZ in the control of metalaxyl-resistant blue mold under Emergency Exemption Status. Based on the nature of the disease in Kentucky, it is unlikely permission to use Acrobat MZ will be obtained prior to early May. As the technical

representative of the Commonwealth in this process, I should have very current information on the status of the application. I will keep County Extension Offices posted via email as to the status and will publish the rulings of EPA and the Kentucky Department of Agriculture related to this request in Kentucky Pest News.

Meanwhile in Kentucky, it is important that all recognize the potential risk associated with blue mold. The transplant production systems in use can be highly conducive to blue mold development and spread. Blue mold in transplant production systems can be controlled with the cultural and chemical options currently available as long as the threat remains low and all actions are preventive. Should blue mold develop any where in Kentucky, it is critical that it be immediately reported to the Plant Disease Diagnostic Laboratory, University of Kentucky. A fresh sample of the disease will be needed to conduct the necessary assays for metalaxyl-resistance. Early detection and reporting of blue mold is a very important step in controlling blue mold every year, but especially important is obtaining emergency labeling of pesticides.

### **INSECT MONITORING IN GREENHOUSES By Lee Townsend**

Early detection and diagnosis of pest infestations will allow you to make pest control decisions before the problem gets out of hand. It is good practice to make weekly inspections of plants in all sections of the greenhouse or outdoor float beds. Pay particular attention to plants near ventilators, doors, and fans. At least 1% of the plants need to be examined on each monitoring visit in the greenhouse.

Insect monitoring devices should be used in the greenhouse. Yellow sticky cards (PT Insect Monitoring & Trapping System, Whitmire) are highly attractive to winged aphids, leafminer adults, whiteflies, leafhoppers, thrips (blue cards can also be used with thrips), various flies and other insects. These can be used to alert you to the presence of a pest and identify hot spots in the greenhouse. One to three cards per 1000 sq. ft. in the greenhouse is recommended. Traps should be changed weekly.

Typically, these sticky cards are suspended vertically just above the tops of the plants. They can be attached to sticks or hung on string. If you cannot

identify a trapped insect, contact your county extension agent for assistance.

## CORN

### CUTWORM CONTROL BEGINS BEFORE PLANTING

By Ric Bessin

The black cutworm is arguably our most serious insect pest of corn in Kentucky. Seemingly overnight, these insects appear to invade fields and vindictively cut off tender seedlings. Often they move down the row, cutting off several plants, not even bothering to consume them. It may appear that their purpose is only to destroy a good stand of corn!

There are a few facts to consider. Young cutworms don't cut plants, they climb seedlings and feed on leaves. This has little if any lasting effect on the plant or yields at the end of the season. The larger larvae, 4<sup>th</sup> through 7<sup>th</sup> instars, cause nearly all of the cutting. It takes time for cutworm larvae to get to the 'cutting' stage. In fact, cutworms that are large enough to cut two, three, and four leaf plants are in the fields before the corn is ever planted.

Beginning in early spring, female black cutworm moths are carried on prevailing winds from the Gulf states into Kentucky. Many of the eggs from these early moth flights are laid on winter annual weeds such as chickweed, henbit, and yellow rocket. When these weeds are chemically or mechanically killed at planting, hungry cutworm larvae attack corn seedlings as they emerge.

One important, but commonly overlooked, cutworm management practice is the preparation of fields 10 to 14 days prior to planting. This can be done with tillage or through the use of a burndown herbicide. Preparing fields *prior* to planting aids in reducing cutworm numbers by removing their weedy food for the 21 or so days before the corn seedlings emerge. While this practice cannot be used in all situations, it can be effective in reducing cutworm levels in many fields.

## SHADE TREES AND ORNAMENTALS

### DOGWOOD POWDERY MILDEW FUNGICIDES

by John Hartman

In recent weeks, there have been many questions posed by Extension Agents and landscape managers about dogwood (*Cornus florida*) powdery mildew disease.

During the past four years, we have seen an increase in the levels of powdery mildew of dogwoods in Kentucky landscapes. In contrast to dogwood anthracnose which is typically only found in the most heavily shaded landscapes, powdery mildew is affecting open-grown and partly shaded dogwoods. In addition to the white powdery growth of the fungus on the leaf surface, infected leaves exhibit marginal scorch, dead patches, reddish discoloration, yellowing, and premature defoliation. Most powdery mildews of landscape trees occur late in the summer and are therefore of little consequence, but dogwoods become infected in early summer. Since powdery mildew is often devastating relatively early in the season, dogwood growers need to know if fungicides can be used to assist in managing this disease.

Cultural practices. Cultural practices that enhance the health of dogwood trees are necessary for a fungicide spray program to be effective. If new dogwoods are being established, good site selection (with well-drained and well-aerated soil and a location exposed to morning sunlight and partial shade in the afternoon), good plant selection (healthy plants from a reputable nursery), and proper planting are essential. Good tree maintenance practices should include mulching to avoid unnecessary trunk and branch injuries from lawn mowers and string trimmers, irrigation (but not over-watering) during dry periods, pruning out dead and rubbing branches, and pruning back overhanging branches from nearby trees to allow better sunlight penetration and air movement. If dogwoods are being replaced, consider resistant dogwoods such as oriental (*C. kousa*) dogwoods. The *C. florida* cultivar 'Cherokee Brave' has partial resistance; all other *C. florida* dogwoods are susceptible.

Fungicides. If fungicide applications are

considered, be sure that the dogwood is a valuable specimen and that spray equipment can provide good coverage. Effective fungicides for dogwood powdery mildew include: Banner MAXX (propiconazole), Bayleton (triadimefon), Cleary's 3336 (thiophanate-methyl), Eagle (myclobutanil), Immunex (the homeowner formulation of propiconazole), Immunox (the homeowner formulation of myclobutanil), and Rubigan (fenarimol). First sprays should be applied in early June and continued once every two to three weeks until mid-August.

A note on Immunex and Immunox: Immunex (propiconazole) is no longer being manufactured. Immunox, (myclobutanil), which has replaced Immunex, at first contained propiconazole, but the formulation has been changed so that it now contains myclobutanil. It is possible that all three products are in the garden stores, but new supplies would be Immunox (myclobutanil).

## MISCELLANEOUS

### THE NAME SOUNDS DELICATE BUT THEY ARE DEADLY TO PESTS

By Doug Johnson

There are many generalist predators in Kentucky crop production systems. In fact, the insect pests that bother us are only those that remain from a much, much larger number that start out on our crops. Fortunately, most pest insects find themselves serving food for predators and parasitoids rather than feeding on our crops. We have a whole complex of natural enemies to thank for that and perhaps one of the most common types are the DAMSEL BUGS.

Don't let the name fool you. The feeding of these common generalist predators is an important factor in the natural insect control going on all the time in Kentucky's fields. Understanding how natural enemies work is not easy but it is necessary to have a clear picture of pest management.

### KNOW YOUR FRIENDS: DAMSEL BUGS by Susan Mahr, University of Wisconsin - Madison

This and other current articles on Biological Control may be viewed in the [Midwest Biological Control News](#) at:

<http://www.wisc.edu/entomology/mbcn/mbcn.html>

Damsel bugs (or nabids, from the family name Nabidae) are slender, tan-colored bugs that resemble small, smooth-looking assassin bugs or other plant bugs that feed on crops. This small family of generalist predators is commonly found in many crop and garden situations. Some other species of damsel bugs are black, but these are less common in agriculture. Damsel bugs feed on many types of insects. They are predators of aphids, moth eggs, and small caterpillars, including corn earworm, European corn borer, imported cabbageworm and some armyworms. Other prey may include leafhoppers (including beet and potato leafhoppers), small sawfly larvae, mites, tarnished plant bug nymphs, and asparagus beetle and Colorado potato beetle eggs and nymphs. Although they can survive for up to two weeks without food, if no other prey is available they will turn to cannibalism.

Members of the genus *Nabis* are the most abundant damsel bugs in crops. Three species are common in the Midwest, but their distribution varies somewhat: *N. americanoferus* has the broadest distribution, from southern Canada through the northern half of the United States; *N. roseipennis* occurs primarily in the northern and eastern parts of the North Central region; *N. alternatus* is more of a western species, not often found east of the Mississippi River. These are all similar in appearance. Some have only one generation per year; others have two to five generations, depending on location. Most species of damsel bugs overwinter as adults.

Damsel bugs are more commonly found in field crops such as alfalfa and soybean than in row crops or orchards. Grassy fields tend to have more damsel bugs than do broadleaf weed or weed-free fields. They are also commonly found in home gardens, where they prefer to take shelter in low growing grasses and ground covers. Maintaining such environments will encourage these predators, although the impact of damsel bugs in vegetable crops is not known.

Damsel bugs can provide some natural control of pest species, but they are not commercially available for augmentation.

# LIVESTOCK

## PASTURE FLY CONTROL OPTIONS

By Lee Townsend

Price breaks on early order opportunities often means considering fly control programs well before the season begins. Here are the basic options for insecticide impregnated ear tags.

Insecticide-impregnated cattle ear tags release small amounts of an insecticide which are distributed over the animal during grooming or rubbing. In general, ear tags have provided excellent, long term control of horn flies and a reduction in face fly numbers.

Factors to consider when using these products:

Read the label before you purchase and use insecticide ear tags. All tags are labeled for beef cattle while only those with certain active ingredients are approved for use on lactating dairy animals. Also, check for any limitations for use, such as animal age.

Look for the common name of the active ingredient (for example, permethrin). In some cases, different brands of tags contain the same active ingredient. You can save money by comparison shopping, or avoid inadvertently using the same active ingredient if resistance is a potential problem.

Consider the recommended number of tags per head. Some brands are used at the rate of one per animal. UK research trials have generally shown that systems which use two tags per animal seem to provide better face fly control than those which rely on a single tag. Animals only need to be handled one time to apply the tags. However, this is not necessarily when you would normally work your animals.

For fly control, it is best to tag animals after horn fly numbers reach 50 or more per side. This reduces the chances of developing resistance to the active ingredients that are being used. Normally, tags provide 12 to 15 weeks of fly control. Tagging too early in the season can mean that the tags are not providing good control in the fall that will help to control the overwintering population.

With insecticidal ear tags, the control system moves with the animals. This may be an advantage if animals are moved at intervals and dust bags or

back rubbers are not in place in every pasture or grazing area.

There are three main types based on the active ingredient(s) that they contain.

1. Organophosphate (OP) insecticides such as diazinon, fenthion, pirimofos methyl, or a diazinon + chlorpyrifos combination. These tags provide good horn fly control and moderate face fly control.

2. Synthetic pyrethroid (SP) insecticides- fenvalerate and permethrin are the original members of this group. These tags are sold under a variety of brand names. Usually they are less expensive than the new, more expensive synthetic pyrethroids, such as cyfluthrin, lambda-cyhalothrin, and zeta- cypermethrin. These tags provide good horn fly control and better face fly control than the OP tags.

The two groups of tags contain insecticides that attack the nervous system of the fly in different ways. Seasonal rotation between an OP and an SP insecticide can be useful in combating insecticide resistance that has developed in horn flies in some areas of the state. Resistance, indicated by a failure in horn fly control, can develop when tags containing the synthetic pyrethroid permethrin have been used for several consecutive seasons. No resistance to organophosphates, or the new synthetic pyrethroids, has been seen.

3. A relatively new group of combination tags has appeared. These couple an OP and a SP in the same tag. Current examples pair lambda-cyhalothrin and pirimiphos methyl or cypermethrin and chlorpyrifos. The assumption is that the OP would control SP-resistant horn flies.

Are there any safety precautions associated with using insecticide ear tags?

Non-permeable gloves should be worn when tagging animals. This is clearly shown in the application pictures on the containers of some tag brands. The hands shown applying the tags clearly have gloves. Comparable pictures with other brands do not obviously show gloves, although label statements indicate that they should be worn.

Insecticidal ear tags should not be handled bare-handed. The concentration of insecticide in the tags varies from 8% to 36%. The tags are manufactured so that the insecticide is rubbed off the surface and onto the animal. Any handling of the tags leaves some insecticide on the hands. The

insecticide then can be transferred easily to the mouth, eyes, face or other areas of the body. Some individuals may be very sensitive to the active ingredients in the tags.

Signal words on the label range from CAUTION to WARNING. Several products carry statements about the potential for allergic reaction following exposure. Many are easily absorbed through the skin or eyes, some have irritation vapors. Wear protective gloves and wash hands thoroughly with soap and water after tagging or when taking a break.

## PESTICIDE NEWS AND VIEWS

### EXPECT PRIVATE APPLICATOR PESTICIDE RECORDS CHECK

A random sample of private applicators were contacted last winter to determine whether or not they were complying with record keeping requirements of their use of Restricted Use pesticides. A random check probably will occur again this year.

The record keeping requirement was implemented as a part of the 1990 Farm Bill and became effective May 10, 1993. It requires that certified private pesticide applicators must keep records of their use of Restricted Use pesticides. Sometime within the next few weeks, inspectors will arrange to visit about 150 randomly selected private applicators in Kentucky to see if they have the appropriate records. Individual applicators will be contacted by the inspector to schedule an appointment. There will be neither fines nor penalties associated with these records checks.

### PESTICIDES AND VEHICLE SAFETY

The safest way to transport pesticides is in the back of a truck. Flatbed trucks should have side and tail racks. Steel or plastic-lined beds are best, because they can be more easily cleaned if a spill occurs. **Never** carry pesticides in the passenger section of your car, van, or truck. Hazardous vapors may be released and make the driver and other passengers ill. Pesticides may cause illness or injury if they spill on you or your passengers. It is nearly impossible to completely remove spills from the fabric of seats and floor mats. They can cause future contamination if they are not cleaned up correctly. If you must transport pesticides in the back of a station wagon, open the side windows

and do not allow anyone to ride in the back. **Never** allow children, other passengers, and pets to ride with pesticides.

**Never** transport pesticides with food, clothing, or other things meant to be eaten by or in contact with people or animals. The risk of contamination is too high. Even small amounts of pesticide could contaminate these highly sensitive items. A spill could cause major injury.

**Never** leave your vehicle unattended when transporting pesticides in an unlocked trunk compartment or open-bed truck. You are responsible and liable if curious children or careless adults are accidentally poisoned by the pesticides. Whenever possible, transport pesticides in a locked compartment.

**Consider** transporting highly volatile pesticides in separate trips from other chemicals. Spills, or even fumes from opened containers, can make the other chemicals worthless.

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