TOBACCO

CURRENT BLUE MOLD STATUS REPORT
by William C. Nesmith

ADVISORY: This is the initial status report for the 2003 season. We have no reports of blue mold activity from Kentucky or adjacent states, but the disease is active in the prevailing wind routes from the southeast - on cultivated tobacco in the southeastern USA. Activity has been confirmed in Florida and advisories have been issued for other southern flue-cured production areas, both from the Florida sources and from Cuba. Burley and dark tobacco growers in the Ohio River Valley are urged to appreciate the risk blue mold in the southeast may present to transplants being produced in that region and moved to our region.

General Information:
A brief review of the Kentucky Blue Mold Warning System and the “status levels” used is in order as we start the new season. The web site is located at the following address: http://www.uky.edu/Agriculture/kpn/kyblue/kyblue.htm

The Kentucky Blue Mold Warning System is operated by the Plant Pathology Department, University of Kentucky and cooperates with local Extension Tobacco Specialists, County Extension Agents for Agriculture and Natural Resources in Kentucky, and the North American Blue Mold Forecast System at North Carolina State University. Extension Educators from neighboring states served by this educational program also are involved to varying levels. The potential for blue mold developing in a particular crop within the state or region is highly variable based on changing epidemiology about the state within any season. Therefore, since 1980 the Kentucky Blue Mold Warning System has been issuing blue mold status reports to help keep growers informed about the status and probability of blue mold development in the state and region. Three levels of status (based on urgency of action) are used for ranking the potential: ‘advisory’, ‘watch’ and ‘warning’ - from lowest to highest disease potential, respectively. These are assigned by geographic area, so different parts of the state or region are often not under the same status. The status-level may be up-graded to one of higher disease probability, down-graded to one of lesser probability, or canceled.

ADVISORY carries the lowest level of urgency and lowest potential for disease developing in the short term. This is used to maintain grower awareness about the disease in general and its progress outside the state and region. However, some of the most valuable information has been issued as advisories, especially that related to transplant management and movement of diseased transplants.

WATCH is used when conditions are conducive for blue mold development, but usually before blue mold has become active in an area. Under this level, it is presumed that viable spores of the pathogen are arriving in the watch area while crop and weather conditions favor disease development in that area. Under a watch, growers are urged to put preventive controls in place and remain alert for the disease. Because of the nature of the control options available to tobacco growers, controls applied early have the greatest impact on overall blue mold development. Should the disease be found, it is important to promptly report the activity to the local County Extension Office and for the County Extension Offices to promptly collect samples and obtain confirmation from the Plant Disease Diagnostic Labs.

WARNING is issued once blue mold activity has been confirmed in an area, and it remains in effect as long as conditions remain favorable for continued spread and development of the disease. In general, growers should not wait until warnings are issued to begin controls, because great damage can result from the initial round of infection.
when inoculum load is high or conducive conditions remain protracted. Instead, controls should begin with or prior to the posting of the watch. However, steps should be taken to maintain and improve control programs during warning periods. County Extension offices should be kept advised of the level of disease in the community and success or failure of recommended controls.

As the situation warrants and based on the information available to us, the status levels are adjusted frequently during the growing seasons to reflect the status of blue mold in a region and potential disease threat. Because blue mold normally persists under Kentucky’s weather and production conditions once established in a community, warnings often remain in place for much of the season once issued, except under unusual conditions. In contrast, significant adjustment occurs under a watch, because they are frequently expanded to other areas, up-graded to warnings, down-graded to advisories, or canceled.

COUNTY EXTENSION AGENTS are the county blue mold coordinators. It is important that agents keep their clientele informed of the blue mold status by community for their county. In addition, agents need to keep the state blue mold coordinator informed about the status of blue mold in their county through initial and regular updates. Reports should include: location of active disease, levels of blue mold activity (including lesion volume, sporulation level, systemic activity, and crop damage), general crop status and weather conditions, and control progress or failures. In addition, first cases for each county need to be confirmed to be sure the area is dealing with blue mold and not rumors of blue mold. Although classic symptoms and signs are easily identified by a trained person, blue mold is not always easily identified because a wide range of symptoms are associated with blue mold and it can be easily confused with several other diseases and disorders. With the initial outbreaks, or at other times if warranted, samples of suspected infections should be submitted to the Plant Disease Diagnostic Laboratories, where identification will occur based on microscopic examination and other assays may be performed. Moreover, the tobacco trade agreement with the Peoples Republic of China requires that all counties with blue mold be reported and that samples of blue mold be submitted from each county or marketing areas to the appropriate USDA-APHIS officials for examination.

CHEMICAL OPTIONS FOR DISEASE CONTROL IN BURLEY AND DARK TOBACCO TRANSPLANT PRODUCTION SYSTEMS - 2003 CROP
by William Nesmith

An adequate supply of healthy transplants is an important first step to having a successful tobacco crop. Infectious diseases can be a limiting factor to successful transplant production; moreover, diseased transplants can serve as important sources of pathogen introduction into the field and community. Recent studies have also demonstrated that diseased transplants, compared to healthy transplants, are predisposed to much more severe attacks in the field from root and stem pathogens. In one study, for example, black shank activity in a resistant variety was increased from 24% incidence to 83% when Pythium infected transplants were set into black shank infested soil.

Use of chemicals alone is not the key to disease control in transplant production. Instead, what is needed is a management approach that carefully incorporates cultural and chemical tools. Control of transplant diseases is achieved through rigorous sanitation measures, careful manipulation/management of the production environment, accurate and timely fertilization, insect vector control, avoiding plant stresses, and timely and thorough application of disease controlling pesticides. Both the incidence and severity of diseases in seedling production can be greatly reduced through preventive spray programs. Even where a chemical is labeled for rescue treatments, I urge it be used in a preventive manner. Why? Because a wound remains if infection occurs, and that wound may serve as an infection site for other diseases, especially when it involves the root and lower stem. Moreover, transplants are too valuable, transplant diseases too explosive, and achieving pesticide coverage too difficult to rely on rescue approaches.

Tobacco transplant production in Kentucky occurs in three systems: outdoor-float-beds, greenhouses, and traditional ground beds. The following infectious diseases have given growers problems in the past: Bacterial diseases: angular leaf spot/wildfire and bacterial soft rot/blackleg; Fungal diseases: anthracnose, blue mold, black shank, black root rot, frogeye, Fusarium wilt and root rot, Botrytis blight, Collar Rot (Sclerotinia), and blights, root rots, and damping-off caused by either Pythium or Rhizoctonia; and, Virus diseases: Tobacco Mosaic Virus (TMV), Cucumber Mosaic (CMV), Tomato Spotted Wilt/Impatiens Necrotic Spot, and the Poty-Virus Complex of etch, vein mottling, and PVY. Labeled chemicals are now available to help with many of the fungal diseases.

Unfortunately, labeled materials are not available for all diseases or for use in all transplant production systems; therefore, growers will need to read and follow labels carefully to avoid problems. Please be aware that, despite common usage in some communities, there is not labeling to support using the following chemicals in tobacco transplant systems in Kentucky: Actigard*, Acrobat MZ*, Acrobat 50 WP*, Benlate, Banrot, Captan, Chipco, Maxim, Ridomil Gold*, Rovral, Quadris, Tilt, or Terraclor. Some of these products have labeling to directly prohibit use in transplant production systems; some of these products (those followed with *) are labeled for field use, however. Others are not labeled on tobacco at any stage.

Below is a review of the preventive fungicide and bactericide treatments labeled for use in Kentucky for control of tobacco transplant diseases as of March 15, 2003. All these uses have proved effective as labeled. A few others are labeled that have not proven effective in our trials, and they are not included. Please be aware that many of the labeled chemicals will cause stunting or other phytotoxic
(phyto) reactions to the tobacco plant even when used as labeled. Some of the production systems in use are so conducive to diseases that these phyto risks appear to be acceptable when weighed against the damage the diseases can cause without controls in place. The labels specifically warn of the risks and also advise on steps that should be taken to minimize those risks. I have recently reviewed these labels and data and believe only the following materials and uses are labeled and effective for the sites and diseases mentioned.

* FERBAM (FERBAM GRANUFLO) is labeled for use in outdoor beds, greenhouses, and float systems in Kentucky, but greenhouse use is not on the label in several other tobacco producing states. This is a very important fungicide for disease control in small seedlings because the risk of phyto is very low, especially at the low rates. It is labeled for prevention of blue mold and Botrytis blight, but will assist in reducing several other fungal diseases. The labeled rate in all transplant production systems (beds, floats, and greenhouses) is 1.5 - 3.0 lbs/100 gallons of water (1 to 3 tablespoons/gallon). Use the lower rates when plants are small and higher rates as plants become larger. Spray preventively twice weekly starting when seedlings have the first true leaf or immediately after plugging with the plug-and-transfer system. Apply as a fine spray to the point of run-off, using 3 gallons of spray material per 1000 sq ft when seedlings are small, increasing gradually to 6 to 12 gallons as plants increase in size and the canopy increases. The label has specific restrictions to avoid contamination of the float-water. We have not observed phyto with this fungicide at these rates, but it does leave a dark residue on the seedlings. Some other formulations of ferbam have national labels for plant beds that allow higher rates of Ferbam to be used, but those labels do not include greenhouse or float beds.

* MANCOZEB (DITHANE DF OR DITHANE DF RAINSHIELD) is another very important preventive fungicide once the plants are large enough to tolerate it. Use it against anthracnose and blue mold, and to suppress damping off diseases caused by Rhizoctonia, Fusarium, and Alternaria. It can be used in all tobacco transplant production systems, but higher rates are needed outdoors. Apply it as a fine spray at high pressure just to the point of run-off, but be careful not to saturate the root zone on small seedlings. For float and greenhouse systems use at 0.5 lbs/100 gallons of water (one teaspoon/gallon). Spray preventively on a 5-7 day schedule starting no earlier than when seedling leaves are about the size of a dime and continue until transplanting to the field. Use 3 gallons of spray material per 1000 sq ft while plants are small, but increase gradually to 6 to 12 gallons as plant size and canopy increase. As plants become larger and more tolerant increase gradually to 6 to 12 gallons as plant size and canopy increase. Twice weekly starting when seedlings have the first true leaf or immediately after plugging with the plug and transfer system. If applications may enhance the effect in these predisposed conditions that induce premature flower, then Terramaster 4EC is labeled as preventive treatment at 0.7 fl. oz/100 gallons of float-bed water. Application should begin no sooner than three weeks after seeding. Supplemental preventative applications can be made at 0.7 fl. oz/100 gallons of float-water 3 weeks after the first application, with a third and final application 2 weeks after the second. Terramaster is also labeled as a rescue (curative) treatment at higher rates of 1.4 fl. oz/100 gallons of float-water. Applications at this higher rate can be used when symptoms first develop but no sooner than three weeks after seeding and with leaves at least one inch in diameter. One additional curative application can be made (if symptoms return) at 1 to 1.4 fl. oz/100 gallons of float-water. There is a limit of 2.8 fl. oz/100 gallons of float-water per bed (crop of plants)/season. No applications can be made later than eight weeks after seeding.

Terramaster 4EC is labeled as preventive treatment at 0.7 fluid oz./100 gallons of float-bed water. Application should begin no sooner than three weeks after seeding. Supplemental preventative applications can be made at 0.7 fl. oz./100 gallons of float-water 3 weeks after the first application, with a third and final application 2 weeks after the second. Terramaster is also labeled as a rescue (curative) treatment at higher rates of 1.4 fl. oz./100 gallons of float-water. Applications at this higher rate can be used when symptoms first develop but no sooner than three weeks after seeding and with leaves at least one inch in diameter. One additional curative application can be made (if symptoms return) at 1 to 1.4 fl. oz./100 gallons of float-water. There is a limit of 2.8 fl. oz./100 gallons of float-water per bed (crop of plants)/season. No applications can be made later than eight weeks after seeding.

I urge Pythium controls be used as preventatives rather than letting the fungus damage the root system and then trying to stop it. Wounded roots are prime targets for opportunistic pathogens in the field - black shank, soreshin, and Fusarium root rot. Some regions have reported problems with premature flowering associated with Terramaster applications, but UK scientists have not been able to reproduce those effects in any of the several studies we have conducted, including rates several fold above the labeled rates. Based on some work from other states, we suspect that if plants have been grown under the environmental conditions that induce premature flower, then Terramaster applications may enhance the effect in these predisposed crops. We have observed phyto in the form of reduced roots, white veins, and slower development in every study.
conducted, including at rates below the effective rates. However, the phyto we have observed in our studies is considered acceptable when compared to the serious damage Pythium is capable of producing. Some phytotoxicity symptoms should be expected with this product. However, it is essential that Terramaster be evenly distributed throughout the float-bed water. The label gives good directions on how to achieve this within the bay, by mixing the product outside the treated bay then delivery of the diluted product uniformly into the bays. In our studies, we have also observed significantly higher phytotoxicity when studies were conducted in water naturally high in pH (above 7.0) than in waters naturally low in pH (less than 6.3).

*STREPTOMYCIN (AGRIMYCIN 17, AGRI-STREP, etc.) is labeled for use in outdoor plant beds. Greenhouse and float bed use is not on the label, however, nor are these sites specifically prohibited on the label. Therefore, growers may elect to use Streptomycin in these systems, but accept that product liability protection may not be provided, because the manufacturers have not elected to include greenhouse and float beds on their labels even with our encouragement. The labeled rate for outdoor beds is 100 to 200 ppm (1-2 teaspoons/gallon), using 3 to 5 gallons of material per 1000 sq ft of bed. Control of angular leaf spot, wildfire, and blue mold are on the label, but most strains of blue mold are not controlled by this treatment. Streptomycin-resistant strains of the angular leaf spot pathogen are present in Kentucky, and it is not highly effective with bacterial soft rots. Sprays can begin as early as the two-leaf stage and should be repeated weekly until transplanting for control of bacterial leaf spots, such as angular leaf spot. Yellowing and stunting can occur if high rates are used. Efficacy is improved if applications are made under conditions that allow for slow drying.

*MILK (Whole or skim at 5 gals/100 gallons water or dried milk at 5 lbs/100 gallons water per 100 sq. yds. of plants) can be used to reduce the spread of Tobacco Mosaic Virus while handling transplants. Spray plants within 24 hrs of handling them. This treatment has also been used successfully prior to clipping of large plants, but it can be very messy unless the system dries well following the application. It should be combined with washing the hands at 15 minute intervals either in the clean milk solution or a phosphate detergent. This treatment is needed only if TMV susceptible varieties are being used or mixed resistant and susceptible varieties are in the same operation.

*BORDEAUX MIXTURE (1 lb bluestone copper sulfate + 2 lbs fresh hydrated lime mixture per 25 gallons of water) is labeled for ground beds as a drench to the soil when the plants have emerged and again 10 days later. This treatment will control algae and aid in the control of diseases caused by bacteria (wild fire, angular leaf spot, and blackleg), and assist in Pythium and blue mold control. Follow the label EXACTLY as to mixing instructions, because Bordeaux mixture can be toxic to tobacco seedlings. Constant agitation is required during application to avoid injury and to achieve control. Do not apply this mixture to large seedlings. The main target is actually the soil rather than the tobacco plant.

ALFALFA

IT'S PROBABLY TOO EARLY FOR ALFALFA WEEVILS THIS SPRING
By Lee Townsend

The alfalfa weevil is the key pest of the first cutting from established alfalfa fields. Feeding damage can appear early in the spring following mild winters but is generally later following cold winters that keep adult weevils from laying many eggs until spring.

Degree day accumulations in south and west Kentucky will reach levels in late March that trigger the first field check for tip feeding damage by weevil larvae. While it is a good idea to check fields that had weevil problems last year, the majority of weevil activity will probably be later in the spring. This will give alfalfa a chance to grow and be less susceptible to feeding damage.

CORN

OCCASIONAL FUMONISIN INSTANCES IN CORN
by Paul Vincelli

Hot, dry weather prior to, during, and after silking last summer may have predisposed some corn crops to development of fumonisins. Several corn samples from a triangular region in western Kentucky bounded by Grayson County, Trigg County, and Warren County have been positive for fumonisins in tests conducted by UK Regulatory Services. Given the weather conditions that prevailed last summer, I also would be on the lookout for fumonisins in scattered crops in the Green River and Purchase Extension Areas of western Kentucky.

Feeding of Contaminated Grain. Contamination of corn by fumonisins is a concern particularly when feeding to horses, swine, rabbits, and catfish. Recommendations of the U.S. Food and Drug Administration are provided in Table 1. Recognize that there may be many other known or unidentified compounds produced by Fusarium fungi that are toxicologically important. Predicting the effects of utilizing feeds of known analytical composition is still difficult. Do not feed screenings to livestock, especially sensitive species. Fumonisins are often concentrated in these, since concentrations are typically highest in broken and damaged kernels.

Testing for fumonisins. For those situations where the producer or the buyer is interested in testing the grain, rapid detection test kits are available for detecting fumonisins and other mycotoxins. A list of commercially available mycotoxin test kits is provided in Table 2. Be sure the test used is approved by the USDA Grain Inspection, Packers and Stockyard Administration. The UK Grain Quality Testing Lab will also test samples for mycotoxins, but you must specifically request such tests when the sample is submitted. County Extension agents can provide information on submitting a sample to the UK Grain Quality
For more information on fumonisins, see the Extension publication ID-121, *Fumonisin, Vomitoxin, and Other Mycotoxins in Corn Produced by Fusarium Fungi*, available from county Extension agents or on the web at <http://www.ca.uky.edu/agc/pubs/id/id121/id121.pdf>.

Table 1. Maximum Levels of Fumonisins in Corn and Corn By-Products Recommended by the U.S. Food and Drug Administration (November 9, 2001).

<table>
<thead>
<tr>
<th><strong>Product</strong></th>
<th><strong>Total fumonisins (FB₁+FB₂+FB₃)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Degermed dry milled corn products (e.g., flaking grits, corn grits, corn meal, corn flour with fat content of &lt;2.25%, dry weight basis)</td>
<td>2 parts per million (ppm)</td>
</tr>
<tr>
<td>Whole or partially degermed dry milled corn products (e.g., flaking grits, corn grits, corn meal, corn flour with fat content of &gt;2.25%, dry weight basis)</td>
<td>4 ppm</td>
</tr>
<tr>
<td>Dry milled corn bran</td>
<td>4 ppm</td>
</tr>
<tr>
<td>Cleaned corn intended for masa production</td>
<td>4 ppm</td>
</tr>
<tr>
<td>Cleaned corn intended for popcorn</td>
<td>3 ppm</td>
</tr>
</tbody>
</table>

**ANIMAL FEEDS**

<table>
<thead>
<tr>
<th>Corn and corn by-products intended for:</th>
<th><strong>Total fumonisins (FB₁+FB₂+FB₃)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equids and Rabbits</td>
<td>5 ppm (no more than 20% of diet)**</td>
</tr>
<tr>
<td>Swine and catfish</td>
<td>20 ppm (no more than 50% of diet)**</td>
</tr>
<tr>
<td>Breeding ruminants, breeding poultry and breeding mink*</td>
<td>30 ppm (no more than 50% of diet)**</td>
</tr>
<tr>
<td>Ruminants $3$ months old being raised for slaughter and mink being raised for pelt production</td>
<td>60 ppm (no more than 50% of diet)**</td>
</tr>
<tr>
<td>Poultry being raised for slaughter</td>
<td>100 ppm (no more than 50% of diet)**</td>
</tr>
<tr>
<td>All other species or classes of livestock and pet animals</td>
<td>10 ppm (no more than 50% of diet)**</td>
</tr>
</tbody>
</table>

*Includes lactating dairy cattle and hens laying eggs for human consumption.

**Dry weight basis.

Table 2. Commercially Available Test Kits for the Detection of Mycotoxins in Corn*

<table>
<thead>
<tr>
<th>Test Kit</th>
<th>Manufacturer</th>
<th>Mycotoxin</th>
<th>Level of Detection (ppm)</th>
<th>Application</th>
<th>Approximate cost per sample</th>
<th>Equipment needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriscreen</td>
<td>Neogen Corp.</td>
<td>DON</td>
<td>1.0</td>
<td>Screening</td>
<td>$6.00-7.00</td>
<td>Starter lab kit, up to $225</td>
</tr>
<tr>
<td>Veratox</td>
<td>Neogen Corp.</td>
<td>DON</td>
<td>0.1</td>
<td>Quantitative</td>
<td>$6.00-700</td>
<td>Microwell strip Reader, $1,875. Starter lab kit, up to $970</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Zearalenone</td>
<td>0.05</td>
<td>Quantitative</td>
<td>$6.00-7.00</td>
<td>(same)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fumonisin</td>
<td>0.2</td>
<td>Quantitative</td>
<td>$6.00-7.00</td>
<td>(same)</td>
</tr>
<tr>
<td>Mycotest</td>
<td>Romer Labs, Inc.</td>
<td>DON</td>
<td>0.5</td>
<td>Quantitative</td>
<td>$16.00</td>
<td>UV Lamp (long wave) $209</td>
</tr>
</tbody>
</table>
**CRESSLEAF GROUNDSEL IN NO-TILL STUBBLE FIELDS**

James R. Martin  Extension Weed Scientist

The wet weather early last season delayed planting and allowed cressleaf groundsel (*Senecio glabellus*) to become a dominant weed in some no-till stubble fields last spring. While it is too early to know how bad this weed will be this season, there is evidence that it is appearing in some fields.

Cressleaf groundsel occurs throughout western Kentucky in wet areas in pastures but is becoming more evident in no-till grain fields, particularly in wet seasons. It is thought to be a biennial, however, some references indicate it is an annual. Butterweed or ragwort are other common names associated with this species.

Cressleaf groundsel grows 1 to 3 feet in height and is characterized by its hollow succulent stems without hairs and yellow daisy-like flowers that occur in clusters at tips of slender stems. Plants bloom April through May. Individual leaves have lobes pinnately arranged along the midrib with a large lobed segment at the leaf tip.

Golden ragwort (*Senecio aureus*), common groundsel (*Senecio vulgaris*), round-leaf ragwort (*Senecio obovatus*), small’s ragwort (*Senecio smallii*) are related to cressleaf groundsel and can occur in Kentucky, but are probably less evident in no-till fields in the western part of the state. They are sometimes confused with mustards, but the daisy-like flower is much different than the 4 petals of mustard flowers.

**CONTROL:** The importance in controlling this weed may in some instances be a matter of debate. The fact that cressleaf groundsel matures and dies back in mid spring indicates that it probably is more unsightly than a competitive problem in no-till corn and soybeans. Those who want to control groundsel may observe that postemergence applications of 2,4-D are generally NOT effective. However, examples of herbicides registered for managing groundsel are listed below:

For **no-till Corn:** Banvel, glyphosate products, Gramoxone Max. Growers who used fall-applied Princep may have had success in managing cressleaf groundsel.

For **no-till Soybean:** Backdraft, glyphosate products, Gramoxone Max, Pursuit.

**SHADE TREES & ORNAMENTALS**

**FLOWERING CRABAPPLES EXPOSED TO SCAB INFECTIONS**

by John Hartman

If this year becomes one of those bad apple scab years for flowering crabapples we can probably look back on this past weekend as the beginning. Based on data provided from instruments located at the University of Kentucky Horticultural Research Farm, a prolonged wetting period (44 hours) began on Thursday last week and ended Saturday morning. With air temperatures averaging near 53 degrees F, heavy apple scab infections would have occurred on exposed susceptible flowering crabapple leaves. In our experience, fungal inoculum from old leaves would be available now. In Lexington, flowering crabapples were at 1/2 inch green tip or more and were likely infected, however most apples here were still at the bud swell (silver tip) stage and would not have had much exposed susceptible leaf tissue. If sterol inhibitor fungicides such as Nova or Rubigan were applied right away, these early fungal infections might still be eradicated.

**PLANT SCAB-RESISTANT CRABAPPLES THIS SPRING**

by John Hartman

Flowering crabapples grow well in Kentucky and are favorites where small trees are desired in the landscape. If new trees are to be planted this spring, landscapers and homeowners will want to be sure to plant scab-resistant cultivars. Ongoing disease evaluations done at Ohio State University by Jim Chatfield and Eric Draper, have provided valuable information on the new scab-resistant flowering crabapples.

The following lists summarize the reaction of flowering crabapple cultivars to apple scab disease. Flowering crabapple cultivars that are immune or resistant to scab show little or no scab and are recommended for planting in Kentucky.


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**Table: Zearalenone and Fumonisin Testing**

<table>
<thead>
<tr>
<th></th>
<th>Zearalenone</th>
<th>Quantitative</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zearlatex</td>
<td>0.5</td>
<td>$16.00</td>
<td>(same)</td>
</tr>
<tr>
<td>Fumonitest</td>
<td>5-10</td>
<td>$10.00</td>
<td>Fluorometer $4,000</td>
</tr>
</tbody>
</table>

*Information courtesy of Dr. Gary Parker, UK Swine Extension Specialist.*
Sprenger’, ‘Red Jewel’, ‘Sugar Tyme’, M. Floribunda. Flowering crabapples that are susceptible or very susceptible are not recommended for planting in Kentucky.


**HOUSEHOLD**

OVERWINTERING BUGS APPEARING IN BUILDINGS

by Mike Potter

Many bugs are beginning to appear “mysteriously” inside homes and businesses. Most have either been ladybugs, cluster flies/face flies, yellowjacket or paper wasp (queens), stink bugs, or leaf-footed (seed) bugs.

Where Did They Come From?

These critters actually gained entry last fall through cracks and openings, and spent the winter hibernating in attics, soffits, wall voids, window/door casings, and similar protected areas. With the onset of warmer weather, the insects have again become active and are emerging from their overwintering sites. As they attempt to escape to their natural habitat outdoors, some inadvertently disperse inward into living areas, emerging from beneath baseboards, behind window and door frames, from within sash-cord openings, and around light fixtures and ventilators. Since many insects are attracted to light, they are often seen around windows and lighting fixtures.

What Can Be Done Now?

This is a temporary annoyance that will run its course as the weather continues to warm. Ladybugs, cluster/face flies, and stink/leaf-footed bugs characteristically do not bite, sting, or carry diseases, nor do they infest food, clothing or wood. They do not breed (reproduce) inside buildings and generally will not survive indoors more than a few days. Yellowjackets or paper wasps spotted indoors this time of year are overwintering queens, attempting to get outdoors to initiate their spring nests. The emerging queens are not normally aggressive, but will sting if mishandled.

Aerosol sprays or foggers are not recommended for treatment of bedrooms, kitchens, or other living areas within the home. The effect of such treatment would be negligible against any insects which have not yet emerged from wall voids and other hidden locations. Flies or ladybugs spotted on walls, windows, and exposed surfaces can just as easily be removed with a vacuum or fly swatter.

What Can Be Done To Prevent Future Problems?

It is hard to predict whether structures experiencing problems this year will have problems next year. Since most of these pests seek out overwintering sites in late-summer/fall, cracks and other openings can be sealed as a preventive measure. Use a good quality silicone or silicone-latex caulk to seal cracks around windows, doors, siding, fascia boards, utility pipes, wires, and other openings. Repair damaged window screens and install insect screening behind attic vents (See Entfact-641, How to Pest-Proof Your Home).

While sealing and weatherstripping can help limit pest entry, the approach is time-consuming and often impractical. There are countless cracks and crevices under and around eaves, siding, vents, etc., where overwintering insects can enter. On multi-story buildings, sealing becomes especially difficult. Households or businesses that do not wish to chance a reoccurring problem with overwintering flies or lady beetles next season may want to enlist the services of a knowledgeable pest control firm. Many companies offer strategically placed insecticide treatments to the building exterior, which helps prevent pest sightings indoors. Long-lasting, rapid-knockdown formulations of pyrethroid insecticides can be professionally applied around eaves, attic vents, windows, siding, and other likely points of entry. The key is to apply the treatments in late September or early October, before pests enter buildings to overwinter. Such treatments would be ineffective at this point (late winter), since the overwintered pests are already indoors.

People have varying levels of tolerance toward insects in their homes. Hospitals, food processors, and other “high-clean” establishments have zero tolerance for contaminants of any kind. Vacuuming, fly swatters and pest proofing, supplemented by client education, are the preferred methods of dealing with overwintering insects infesting structures in Kentucky. Insecticides should be used only when the situation warrants, and prescribed as indicated above.

LIVESTOCK

SELF-APPLICATION DEVICES FOR FLY CONTROL

By Lee Townsend

There are several systems that can be put in place so that cattle can treat themselves with insecticides for horn fly and face fly control, generally in an effective and economical manner. Dust bags and backrubbers can be made or purchased. In addition, there are spray systems that can be incorporated into mineral stations or triggered as animals...
pass through gaps in fences between pastures.

Self-applicators must be placed where all animals will use them daily. The devices must be sturdy enough to hold up to frequent use and situated so they are easy to re-charge. Dust bags need to be hung so that the animal must butt it with its head to pass by. This way, the face and backline are treated. Dust bags can provide excellent horn fly control and good face fly control if they are placed correctly.

Backrubbers provide good coverage of the back and sides. This is fine for horn fly control but "fly-flips" must be added to provide coverage to the face for face fly control. Backrubbers are often set in loafing areas and use by some animals may be very irregular.

Several sprayer designs incorporate compressed air or a solar collector and electric pump to deliver a measured spray dose as the animal visits a mineral station. These can be set to deliver the product to the face and backline as the animal feeds.

Self-applicators need to be checked regularly to make sure that they are charged and functioning properly. Watch the animals use the devices to see if a change in placement will improve application or ensure that all animals get treated.

**INSECT TRAP COUNTS**

**UKREC, Princeton KY**

March 13-24
Black Cutworm .................................. 0
March 20 - 24
True Armyworm ............................... 4

**NOTE:** Trade names are used to simplify the information presented in this newsletter. No endorsement by the Cooperative Extension Service is intended, nor is criticism implied of similar products that are not named.