



KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE

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DECEMBER KENTUCKIANA CROP PRODUCTION PROGRAM

The annual Kentuckiana Crop Production Seminar will be held December 12 - 13, 2000 at the Radisson Hotel, Evansville, IN. A CCA continuing education program, three hours of continuing education credit in either cropping systems management or soil and water management, starts at 8 am. The Crop Production Seminar runs from 1 pm to 5:10 pm on December 12 and from 8 am until noon on December 13. The program will be submitted to the Division of Pesticides Ky Department of Agriculture for continuing education credit for commercial pesticide applicators (Categories 1 and 12).

CURRENT STATE LOCAL NEED (24-C) REGISTRATIONS FOR KENTUCKY By Kentucky Division of Pesticides

Section 24 (c) of the Federal Insecticide Fungicide and Rodenticide Act (FIFRA) permits the Kentucky Department of Agriculture to register federally registered pesticides for some uses that are not on the existing label. 24-c or State Local Need Labels, are valid only in the state of issue. The applicator must

possess a copy of the state label when the pesticide is applied. In Kentucky, 24-c labels are valid for three calendar years.

When there is an existing or expected local or minor pest problem, the Kentucky Department of Agriculture will be permitted to register one or more pesticide products if:

- ! there is no EPA-registered pesticide for the use in question.
- ! the EPA-registered pesticide is not available or cannot be obtained in sufficient quantity.
- ! there is a suitable EPA-registered pesticide which, if used in accordance with the label, would not be safe or effective under the local conditions.

States cannot register:

- pesticides on food crops that do not have an established tolerance on that crop.
- pesticides containing active or inert ingredients not contained in any EPA- registered products.
- pesticide products or uses affected by suspension or cancellation based on human health, environmental, or efficacy considerations.
- pesticide products and/or uses previously denied registration by EPA.



Special local needs registrations may be sought by commodity groups, university, industry or others. The pesticide manufacturer or formulator must, however, be willing to support the effort and to prepare the documentation needed to justify the request. The registration is not effective for more than 90 days if disapproved by the EPA Administrator within that time.

TOBACCO

DEALING WITH MOLD ON CURING TOBACCO

by William Nesmith*, George Duncan and Gary Palmer

Product Name - Use	SLN Number	Expiration Date
Command 4EC winter and summer squash	KY-930002	12/31/02
Dithane DF* tobacco seedlings for transplant	KY-940002	12/31/02
Command 4EC cabbage	KY-960003	12/31/02
Poast tobacco	KY-970002	12/31/02
Dual Magnum* transplanted bell peppers	KY-990001	12/31/02
Dual Magnum* cabbage	KY-990002	12/31/02
Acrobat MZ control of metalaxyl / mefanoxam-resistant strains of blue mold in tobacco	KY-990003	12/31/02
Terrazole 35 WP control of pythium root rot in tobacco transplant float beds	KY-000001	12/31/02
Tracer* control of budworms and hornworms on tobacco	KY-000002	12/31/02

Recently, some areas of Kentucky have experienced periods of hot, humid weather with heavy fog persisting from dark to mid-morning for several days running. Others have experienced several days of misty to heavy rain. Now reports are being received of extensive molding of cured tobacco, especially in river valleys. The problem is generally not occurring on uncured tobacco. Rather, it is mainly associated with tobacco harvested early and already cured, which in general was some of the best quality leaf from this year's crop.

The frequent periods of protracted mild, wet weather during August and September have been providing favorable conditions for mold development in curing tobacco, especially that housed early. With more wet weather in the forecast, growers should expect increased potential for mold development in mid to late harvests, as more of the tobacco cures and becomes more susceptible to mold development. Let's all remember that a greater percentage of the 2000 crop is earlier than normal, so there is a higher percentage of this crop exposed to the mold threat. Thus far, County Extension Agents have indicated that most mold activity has been associated with tobacco housed in traditional barns, but tobacco housed early in out-door curing systems is also developing mold. However, this pattern may be as much the result of the tobacco being further along in the curing process, because in general, growers filled the barns first. On some farms where out-door structures were used in early August, significant mold has been reported, especially where the structures are located in low areas. For example, Mike Carter, Garrard County Extension Agents, reported considerable house burn and mold developing in outdoor structures in his area.

Some frequent questions are: Why does mold develop some years and not others? How do you prevent mold development? Does mold harm the tobacco? And, how do you remove it from cured leaf? Hopefully, the discussion below will help growers and agents with these questions.

* Still within EPA's 90-day period to revoke. European and southwestern corn borer levels are high

Once the tobacco leaf is dead it becomes an excellent source of food for a number of fungi that could not feed on it while it was alive. Thus, the pattern of the mold being mainly associated with early housed tobacco relates to the fact that it has more dead leaf, while the later-housed plants are still alive. The colonization of the leaf by these fungi results in moldy tobacco which is lower in quality and weight due to deterioration, off-colors, and residues from fungal metabolism. Consequently, moldy tobacco is of less value.

A small amount of mold develops every year on cured tobacco, especially the stems (mid-ribs), but this is not usually considered to be serious. However, when mold develops on the lamina of the leaf, there is concern. Problem levels of mold develop when moist conditions prevail. Furthermore, the higher the temperature during the moist period, the more rapid is the mold development. In general, the mold growth rate doubles for every 18 degrees F in increased temperature.

Most of the mold problems thus far are associated with early crops in poorly managed curing situations, such as tobacco hanging close to the ground or in areas where surface water is draining into the barn. If the humid weather being experienced continues to persist, the mold problem could begin to plague tobacco housed under better curing conditions and even crops housed later in the season.

Judicious management of the barn's ventilation system is critical to preventing moldy tobacco. Basically, it boils down to controlling moisture in the dead leaf. The leaf absorbs water from the humid air around it, so the key is to minimize the time moisture-laden air exists in the barn, especially when summer-like temperatures are occurring.

Generally, the moisture content of air is higher at night and during rainy periods than during the daytime. Therefore, closing the barn doors and ventilators at night and promptly before a rainy period should reduce the level of moisture inside the barn. Opening the ventilation system after the rain stops and during daylight hours will allow the inside air to dry more rapidly. Obviously, proper barn construction is critical to this operation, including good site selection and adequate ventilation. Fans can be used to increase ventilation capabilities, (See AEU-7, 'Using Fans in Conventional Burley Barns').

However, it is important that enough air be moved through the tobacco and not just in the gable ends or at the ground level. With outdoor or field curing structures, plastic covers need to be in place to prevent direct wetting of the leaf, followed by proper manipulation of plastic to manage ventilation, followed by timely stripping of the crop from these structures.

When wet periods persist longer than 24-36 hours, especially when temperatures are warm, the inside air can become saturated even with ventilators closed. Supplemental heat, although costly and probably not economical at current prices, can be used to dry the air. If heat is being used, the ventilation system should be partially opened to allow the warm moist air to escape the barn. Otherwise, the barn and tobacco will 'sweat'. Once the favorable outside drying conditions return the heat should be stopped and the barn opened. If heat is not used during these prolonged wet weather periods, the next best option is to leave the barn open to take advantage of whatever air circulation and drying exist.

Removing Mold from Tobacco

No chemical is labeled for preventing mold growth on tobacco in the curing barn. But there also is no shortage of rumors of home remedies being tried. Most of those could result in serious and illegal residue problems that would destroy the usefulness of the tobacco to the industry. Spraying Ridomil on the barn floor, walls, and hanging tobacco does NOT prevent molding of tobacco based on properly conducted experimentation; besides, it is not labeled for such use. This fungicide does not even control the group of fungi involved!

There is a badly out-of-date publication from back in the 1960 or 70's that many have. It clearly indicates that experiments were conducted several years ago in cooperation with the University of Kentucky which demonstrated that mold could be removed to some extent from cured tobacco with a variety of alcohols. The alcohol compounds mentioned in that publication are exempt by EPA from residue tolerance requirements on tobacco, so they can be used in conjunction with otherwise good agricultural practices. **HOWEVER, PLEASE BE AWARE THAT** no company has come forward and labeled such use, so the liability associated with their use rests with those making the recommendation and those using them! Alcohols are highly flammable and thus pose a serious risk to persons and property from fire.

Therefore, we specialists are not willing to recommend the use of alcohols for the removal of mold on cured tobacco. We mention the alcohols here, not as some type of hidden recommendation, but as point of clarification and because many have requested our position on this issue.

* William Nesmith, George Duncan and Gary Palmer are Extension Plant Pathologist, Extension Agricultural Engineer, and Extension Tobacco Specialist, respectively, in the College of Agriculture, University of Kentucky.

CORN

DIPLODIA EAR ROT UPDATE

by Paul Vincelli, Plant Pathologist and Sam McNeill, Ag Engineer

Diplodia ear rot has been a significant problem in some corn fields in Kentucky this year. Thanks to Extension Ag Engineer Sam McNeill, I became aware of a new publication on Diplodia ear rot from Purdue University (Diplodia Ear Rots in Indiana, Grain Quality Fact Sheet #45, by C. Woloshuk and D. Maier). Their publication has some important points which are summarized here.

Discounts Possible

Diplodia ear rot can potentially result in significant discounts when graded at the elevator or other point of sale. This is due to several factors.

(1) Diseased kernels are lighter, which can reduce test weight and thus result in a test-weight discount. While test-weight discounts vary by elevator, they are commonly around 1 cent/bu for every lb/bu of test weight below 54 lb/bu.

(2) Diplodia-infected kernels will also be counted among the Total Damaged Kernels tally. Damage discounts vary by elevator but are usually around 1 cent/bu for every percent of total damage above 5%. Loads with over 20% damage may be subject to rejection.

(3) Diplodia infection also results in more cobs and kernels being ground up during shelling, resulting in a higher level of broken corn and foreign matter (BCFM). While BCFM discounts vary by elevator, they are commonly around 2 cent/bu for every percent of BCFM above 3%. Loads with foreign

matter over 10% may be subject to rejection.

Storage Considerations

Infected kernels break easily during shelling and handling, which can result in more fine material in the bin. To circumvent this we recommend cleaning to remove fines, especially after drying and before delivery and/or storage.

Although drying to 15% will stop Diplodia growth in kernels, the rot has opened the kernel up to invasion by other storage fungi that can grow at 15% moisture, such as *Aspergillus glaucus*. Thus, corn affected by Diplodia should be dried to below 14%, cleaned, and cooled to below 50 F as soon after harvest as possible. Also, do not store Diplodia-affected corn into the summer.

WIDESPREAD STALK ROT PROBLEMS MEANS PRODUCERS SHOULD SCOUT NOW

by Paul Vincelli

In the last issue, I reported on cases of severe stalk rot in the Green River Area. Since that time, reports of moderate to severe stalk lodging have come in from a number of locations. Because of the widespread occurrence of stalk lodging problems, producers are strongly encouraged to scout all fields for lodging potential. A simple way to do this is to walk through the field and push stalks 8-10 inches from vertical: those that fail to spring back have the potential to lodge in a strong wind. If more than 10-15% of the stalks in a field lodge by this method, producers may wish to consider scheduling the field for early harvest. Even though the cost of liquid propane is high, increasing the cost of drying early-harvested fields, the risk of lodging and the resulting problems and yield loss must also be considered.

We have examined some cases of stalk lodging in the Diagnostic Labs. At this point it appears as though Gibberella stalk rot is the most common disease involved. Diplodia stalk rot has been found in several instances, and Fusarium stalk rot has also been confirmed in at least one instance. While injury from stalk-boring insects is often present in many fields, for the cases in which I've been involved, most of the stalks have lodged as a result of stalk rots, not insect injury. This is important for producers to understand so that they don't overuse Bt corn hybrids next year in an effort to control the wrong problem. UK

recommendations for use of Bt hybrids are still the best guidelines.

Stalk rot diseases are the result of *opportunistic* infections. What this means is that certain stress factors, such as low carbohydrate status in the stalk, predispose the plant to infection, and the “first one to attack, wins”; that is, the first fungus to infect the stalk is the one that causes the stalk weakening. What this also means is that the most important thing to do from a production standpoint when stalk rots attack is to evaluate one’s cultural program and see if there are particular agronomic stresses that might be alleviated. Factors that might enhance stalk rot problems include: excessive plant population, excessive N in relation to potash, high N levels early in the season followed by N loss through leaching or denitrification, inadequate levels of potash, low stalk strength ratings of hybrids planted, and severe leaf disease. Producers may wish to evaluate these factors to see if there are ways to reduce the risk of stalk lodging in future years.

CORN BORER ADVISORY **by Ric Bessin**

Reports of heavy corn borer infestations continue, some corn producers say this is the worst they have seen in 20 years. Much of this is caused by southwestern corn borer, but there is considerable damage by European corn borer as well. Southwestern corn borer is continuing to girdle stalks just above the soil line and will continue to additional stalks through mid October. Producers need to identify the most heavily infested fields and plan to harvest them as soon as the moisture level of the grain is acceptable. Pay particular attention to fields planted after May 10.

WHEAT

POWDERY MILDEW MANAGEMENT: NOW IS THE TIME FOR DECISION-MAKING **by Don Hershman**

Powdery mildew, if left to develop unchecked, can seriously impact crop yield. This is especially true for fields where disease develops early (e.g., pre-flag leaf emergence) and continues throughout the season. When significant levels of powdery mildew are detected for a field, impacted growers may consider the option of disease management using either Tilt or

Quadris. Either fungicide will do the job, but if applications are made before the early heading stages, late-season disease control may be compromised. The only option would be to make a second application using Quadris. It is illegal to apply more than 4 fl oz/A of Tilt to a crop, but the Quadris label does provide for two applications. Excessive cost would, however, assure that this option is not a viable one.

In the old days, powdery mildew could be effectively and decisively controlled by applying 2 oz of Bayleton. You may recall that Bayleton no longer has a wheat label. Thus, that option no longer exists with one exception. I am told that it still may be possible to find old Bayleton with wheat on the label. I have no idea where it is or how easy or hard it would be to come up with any significant stocks of Bayleton. But if it can be found, it is legal to use on wheat even though new Bayleton cannot be applied.

There are two ways to avoid the powdery mildew fungicide dilemma altogether. The most economical and, perhaps, desirable way is to plant a variety with resistance to powdery mildew. These varieties are readily available and perform very well in the presence of significant disease pressure. Another way, but one which is significantly more costly and involved logistically, is to plant seed treated with the fungicide Baytan. Baytan seed treatment will effectively control powdery mildew in a crop up to the boot stage of development in the spring. This is usually all it takes to stifle yield reductions due to powdery mildew in a disease-susceptible variety. The cost of Baytan and arranging to have seed treated with the product makes the use of a resistant variety more palatable.

With the wheat planting season just around the corner, it would be best to address the powdery mildew situation now while you still have all the options discussed above available to you.

SHADE TREES & ORNAMENTALS

A KENTUCKY CONFERENCE ON TREE ROOTS AND SOIL HEALTH **by John Hartman**

“Down and Dirty in Kentucky: a closer look at tree roots and soil health,” is the theme of this year’s Kentucky Urban and Community Forestry Conference. The Conference, sponsored by the

Kentucky Arborists Association, the Kentucky Division of Forestry, and the U.K. Cooperative Extension Service is scheduled for Mon., October 30 - Wed., November 1 at the Holiday Inn, (405 Wilkinson Blvd.) Frankfort. The program should prove to be very informative with several renowned tree and soil experts from across the country listed as prominent speakers.

On Monday, topics such as "Making Tree Roots Visible," "Soil Food Web," "Soil Structure," "Dr. Treevorkian," and "Pesticide Applicator Training" will be featured. Speakers include Bonnie Appleton, Serita Frey, Chris Carlson, Jim Chatfield, and Monte Johnson. Tuesday, the subjects of "Soil-oriented Construction Damage," "Planting Depth Study," "Tree Care Advisor Program," "Root Diseases," "Street Trees," and "Repairing Soils After Development" will be covered by presenters such as Alan Siewert, Bill Fountain, John Hartman, Marty Shaw, and Gary Johnson. The Conference will conclude Wednesday morning with "Soil Biology," "Soil Remediation," "Urban Soil vs. Forest Soil," and "ISA Arborists Certification Exam" with presentations by Kim Coder, Tom Kimmerer, and Dave Leonard.

In my experience, trees in landscapes suffer more from soil and root-related problems than they do from above-ground problems. Further, most soil-related tree problems are the result of mismanagement of cultural practices such as soil preparation, planting depth, root injuries, site selection, watering, mulch application and species choices. County Extension Agents, arborists, landscape maintenance professionals, and municipal tree board members face these and many other tree difficulties on a daily basis. This conference will provide solutions to many of these problems affecting tree health.

To obtain registration materials, contact Dino Kent, Conference Chair, 215 Forest Park Road, Lexington, KY 40503; tel. 859-278-3582; e-mail, tresec@msn.com. For conference program information, contact Dave Leonard, 1302 North Limestone, Lexington, KY 40505; tel. 859-252-2529; e-mail dave7oaks@aol.com. For trade show information contact Larry Lose, 10105 Afton Road, Louisville, KY 40223; tel. 502-245-4036, e-mail lmlose@christianliving.net. Reservations for lodging may be made at the Holiday Inn, 405 Wilkinson Blve., Frankfort, KY 40601; tel. 502-227-5100.

Bacterial leaf scorch is visible now by John Hartman

County Extension Agents, landscape professionals, and observant homeowners have no doubt noticed premature browning of many shade trees, particularly oaks this month. Most of the affected trees are suffering from bacterial leaf scorch, caused by *Xylella fastidiosa*. This disease is found on several shade and landscape trees in Kentucky, but oaks, especially pin oaks are the primary victims.

Symptoms. Bacterial leaf scorch disease symptoms include premature leaf browning and defoliation, and leaves have a marginal necrosis. Symptoms appear in the summer and early fall and may begin on one branch. Infected trees leaf out normally the following year, and in late summer, leaves of a few more branches turn prematurely brown. These events repeat themselves over a period of several years until the entire infected tree turns prematurely brown in fall and begins to show twig and branch dieback and tree decline. The reason for the scorching symptom is that the pathogen is found in the xylem tissues of trees where it blocks the flow of water to the leaves. The bacterial leaf scorch pathogen is spread by leafhoppers and treehopper insects, but it does not appear to be spread from tree to tree very rapidly by these insects. Nevertheless, in some neighborhoods with mature oaks and with the disease present for many years, perhaps half of the trees can show symptoms of bacterial leaf scorch. The disease is confirmed in the University of Kentucky Plant Disease Diagnostic Laboratory by detecting the bacteria in infected leaves with a special test specific for *Xylella*, the cause of the disease.

Where is bacterial leaf scorch? In Kentucky, bacterial leaf scorch has been commonly observed in pin oak, red oak, shingle oak, bur oak, and sycamore. It is also occasionally found in red maple, sugar maple, silver maple, London plane, and sweetgum. In other states, the disease has also been detected in American elm and mulberry. On the U.S. capitol mall in Washington, DC, for example, as early as mid-June, American elms can be seen with symptoms of bacterial leaf scorch. Bacterial leaf scorch is present in landscape trees in many of the urban areas of Kentucky. The bacteria have been identified in urban trees from such cities as Paducah, Madisonville, Owensboro, Bowling Green, Somerset, Louisville, and

Lexington. In Kentucky, this disease has not been detected in forest trees.

Prognosis for infected trees. There is no effective long-term cure for bacterial leaf scorch. Because infected trees decline gradually, it may take from five to ten years until they have many dead limbs and branches and need to be removed. In the meantime, tree owners should provide good growing conditions for the trees to prolong their survival, and begin to plant replacement trees that will attain a reasonable size before the diseased ones are removed.

BOXELDER BUGS

By Lee Townsend

Boxelder bugs are common insects that feed on sap from leaves, twigs, and seeds of boxelders, as well other members of the maple family. Large numbers of them can be seen on tree trunks, or branches, or sunning themselves on the south or west sides of buildings in the spring and fall. These harmless accidental invaders may be a temporary nuisance as they move into and out of sheltered overwintering sites in the fall and spring.

Adult boxelder bugs are elongate, ½" long insects with sucking mouthparts. They are mostly black with some red markings. There are three narrow red lines on the segment behind the head, one down the center and one on either side and a thin red inverted "V" about the middle of the back. The wingless immature or nymphal stage has a black head, antennae, and legs. The red abdomen has an orange-yellow stripe and spot down the center of the back.

Boxelder bugs feed on plants during the summer. They move to sheltered areas (including nearby houses and buildings) in the fall and remain there during the winter. Sweep or vacuum up and discard those found inside. They will not multiply nor will they infest any household articles. These insects are only a nuisance or accidental invader; however, they may leave an odor and stain when crushed.

Exclusion is important in reducing numbers that get indoors. Check door sweeps and places outside the house that may allow them to get inside. If large numbers are present every year, removal of female boxelder plants should be considered because this is the major host plant for them. Other alternatives include controlling insects while they are on the boxelder plant or direct sprays of congregations of the

insects on outside walls. Insecticidal soap provides a safe control alternative but it must be sprayed directly on the insects to be effective.

HOUSEHOLD

HOW TO PEST-PROOF YOUR HOME

By Mike Potter

According to a statewide poll of Kentucky householders, 93% expressed concern over finding insects inside their home. More than half indicated that a *single* cockroach, cricket, or spider would prompt them to use a can of bug spray or call an exterminator. What many people do not realize, however, is that most pests discovered indoors have flown or crawled in from outdoors.

One of the best ways to limit unwanted intrusions by insects, rodents, birds, squirrels and other pests is to deny them entry— a procedure known as *pest proofing*. Many pests seek refuge in homes and buildings in response to changes in weather, such as extended periods of rain or drought, or the onset of cooler autumn temperatures. Taking steps to block their entry *before they end up inside* can greatly reduce the chances of future sightings.

Outlined below are six useful tips for pest proofing one's home or place of business. Steps 1-3 will also conserve energy and increase the comfort level during winter and summer. Equipment and materials mentioned can be purchased at most hardware or home improvement stores.

1. *Install door sweeps or thresholds* at the base of all exterior entry doors. While laying on the floor, check for light filtering under doors. Gaps of 1/16" or less will permit entry of insects and spiders; 1/4"-wide gaps (the diameter of a pencil) are large enough for entry of mice; ½" gaps are adequate for rats. Pay particular attention to the bottom corners as this is often where rodents and insects enter.

Apply caulk (see #3 below) along bottom outside edge and sides of door thresholds to exclude ants and other small insects. Garage doors should be fitted with a bottom seal constructed of rubber (vinyl weatherstripping seals poorly in cold weather). Gaps under sliding glass doors can be sealed by lining the bottom track with ½ to ¾ inch-wide foam weatherstripping.

2. *Seal utility openings* where pipes and wires enter the foundation and siding, such as around outdoor faucets, receptacles, gas meters, clothes dryer vents, and telephone/cable TV wires. These are common entry points for rodents, ants, spiders, yellowjackets and other pests. Holes can be plugged with caulk, cement, urethane expandable foam, steel wool, copper mesh, or other suitable sealant.

3. *Caulk cracks around windows, doors, fascia boards, etc.* Use a good quality silicone or acrylic latex caulk. Although somewhat less flexible than pure silicone, latex-type caulks clean up easily with water and are paintable. Caulks that dry clear are often easier to use than pigmented caulks since they don't show mistakes.

Buy a good caulking gun. Features to look for include a back-off trigger to halt the flow of caulk when desired, a built-in "slicer" for cutting the tip off of new caulking tubes, and a nail for puncturing the seal within. Hardware stores sell guns with these features for less than \$10.00. Prior to sealing, cracks should be cleaned and any peeling caulk removed to aid adhesion. For a professional look, smooth the bead of caulk with a damp rag or a moistened finger after application.

4. *Repair gaps and tears in window and door screens.* Doing so will help reduce entry of flies, gnats, mosquitoes and midges during summer, and cluster flies, lady beetles, and other overwintering pests in autumn. Certain insects, in particular leafhoppers and hackberry psyllids, are small enough to fit through standard mesh window screen. The only way to deny entry of these tiny insects is to keep windows closed during periods of adult emergence.

5. *Install 1/4-inch wire mesh (hardware cloth) over attic, roof, and crawl space vents* in order to prevent entry of birds, bats, squirrels, rodents, and other wildlife. Be sure to wear gloves when cutting and installing hardware cloth, as the wire edges are razor sharp. Invest in a chimney cap to exclude birds, squirrels, raccoons and other nuisance wildlife.

6. *Consider applying an exterior (barrier) insecticide treatment.* While sealing is the more permanent way to exclude pests originating from outdoors, comprehensive pest-proofing is labor-intensive and sometimes impractical. For clients requiring an alternative, pest proofing can be supplemented by an exterior treatment with an insecticide. Homeowners

will get the most for their efforts by applying longer-lasting liquid formulations containing synthetic pyrethroids (e.g., Bayer Advanced Home/Garden™ Multi-Insect Killer, Spectracide Bug Stop™, Ortho Home Defense System™) or microencapsulated, slow-release Dursban, sold at hardware/lawn and garden shops.

Apply with a pump up sprayer, hose end sprayer, etc., treating at the base of all exterior doors, garage and crawl space entrances, around foundation vents and utility openings, and up underneath siding. It may also be useful to treat around the outside perimeter of the foundation in a 2 to 6-foot-wide band along the ground, and 2-3 feet up the foundation wall.

Clients who choose not to tackle these activities may wish to hire a professional pest control firm. Many firms now offer pest proofing as an adjunct to other services. When all else fails, a vacuum cleaner or broom is often the best response to the occasional bug that wanders in from outdoors.

PESTICIDE NEWS & VIEWS

TACO BELL TACO SHELL CONTROVERSY by Ric Bessin

Last week it was reported that a group had found traces of StarLink corn in Taco Bell taco shells. This is significant as StarLink corn possess the Bt gene that produces the Cry9C protein. StarLink corn was approved for commercial production in 1998, but the grain produced from StarLink hybrids are restricted for use only as animal feed. StarLink corn is not permitted for human consumption. It is too early as to speculate on the cause of this contamination and additional tests by an independent lab is needed to confirm this contamination.

While StarLink is not approved for human consumption, the other Bt corns including YieldGard, NatureGard, Knock Out, Bt-Xtra, and Attribute are approved for human consumption. These other Bt corn events use the Cry1A(b) and Cry1A(c) proteins. The reason why StarLink has not received approval for human consumption is that it is a novel Bt protein and it is more resistant to degradation in the digestive systems of mammals. For those reasons, the FDA is concerned that it MAY be an allergen. Currently, it has not been proven that the Cry9C protein is or is not a human allergen. Until the human allergenicity

issue is resolved, StarLink corn will not be approved for human consumption.

However, grain from StarLink corn is approved for use as animal feed. Is there a problem when humans eat animals that have been feed StarLink corn? No, definitely not. The Bt proteins are either broken down in the animal or pass through the digestive system entirely. So despite the uncertainty of consuming StarLink directly, there is no problem associated with consumption of animals that have been raised on StarLink grain.

If this StarLink contamination of the taco shells is confirmed, then it will be necessary to determine how this happened. There are several different scenarios which may caused this type of contamination. This may include but is not limited to:

- failure to properly clean old seed planting equipment resulting in a mixture of StarLink with other seed,
- pollen drift from a nearby StarLink field to a food grade corn field resulting in cross pollination,
- misidentification of seed or grain on the farm or of grain in marketing channels,
- inadequate cleaning of harvest machinery, loading and transportation equipment, or storage facilities,
- careless mixing of grain, or
- failure to understand current use restrictions with StarLink corn.

While the immediate hazard posed by StarLink corn in the taco shells may be minimal, this does raise the issue of how well can we maintain the identity of these different types of corn with our current marketing infrastructure? We will hear more about this issue as additional information becomes available.

DIAGNOSTIC LAB HIGHLIGHTS **by Julie Beale and Paul Bachi**

Recent field crop samples submitted to the Diagnostic Lab have included Gibberella stalk rot, Fusarium ear rot (*F. moniliforme*), gray leaf spot, and the virus complex on corn; Cercospora leaf spot and Rhizoctonia stem canker on alfalfa; charcoal rot, anthracnose, stem canker, sudden death syndrome, soybean cyst nematode and root knot nematode on soybean. Fruit and vegetables samples have included anthracnose on raspberry; bacterial canker on cherry; scab and brown rot on peach; Fusarium fruit rot on

cushaw; and Rhizoctonia stem canker on cabbage. Ornamental samples have been numerous and have included Pythium and Rhizoctonia root rots on daylily; bacterial spot on Heuchera; Rhizoctonia stem rot on impatiens; Cladosporium leaf blotch on peony; impatiens necrotic spot virus and southern blight on vinca; rust and summer patch on bluegrass; anthracnose and gray leaf spot on ryegrass; ash yellows on ash; Phytophthora root rot and black root rot on boxwood; Cercospora leaf spot on mulberry; bacterial scorch on oak; Cercospora leaf spot on sourwood; rose rosette on cultivated rose; and bacterial leaf spot on viburnum.

INSECT TRAP COUNTS

UKREC, Princeton, KY

August 25-September 8, 2000

Fall armyworm	8
Corn earworm	35
European corn borer	7
Southwestern corn borer	51



Lee Townsend, Extension Entomologist

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.

