



KENTUCKY PEST NEWS

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TOBACCO

CHINA-U.S. AGREEMENT ON TOBACCO TRADE INVOLVES BLUE MOLD by William Nesmith

A ban has been in place since 1989 that prohibits the importation of US tobacco into China. There may be multiple reasons for this ban, but a quarantine against tobacco blue mold is the official reason for the prohibition. China is the world's largest producer of tobacco and reportedly does not have tobacco blue mold. Plant pathologists from China have advised that blue mold is feared above all other tobacco diseases.

On February 5, 2001, the United States Department of Agriculture (USDA) announced that China had agreed to modify its regulations that currently ban U.S. tobacco imports into China. Shipments will not begin until the appropriate regulations are in place, however. Most likely, the final regulations will continue to focus on blue mold. Therefore, control of blue mold will remain important to selling U.S. tobacco to China.

Scientists from China's Inspection and Quarantine Agency visited North Carolina, Kentucky and some other U.S. tobacco production areas (fields, barns, warehouses, and research laboratories) last August and September to obtain first-hand information about tobacco blue mold, tobacco production and processing, and disease and pest controls. While in

Kentucky, they were hosted by the Burley Tobacco Growers Cooperative Association in Lexington, which requested my involvement.

I worked closely with this team to help insure that their scientists received adequate opportunity to learn what they needed to support any science-based decisions that were involved. Our observations and experiments were conducted side-by-side. We observed crops without blue mold and with blue mold in the same community, and we conducted laboratory experiments on the same material together.

One thing that became very clear to me from working with their scientists was this. They noted that the practices of U.S. tobacco production often lack sufficient respect for this disease. They were especially concerned that our tobacco from blue mold-free areas was blended with tobacco from blue mold-active areas, and that infested transplants move from areas with blue mold to those without it, both across state borders and within state lines. It was clear to them that blue mold is common and widely present in burley tobacco.

Consequently, the new inspection and quarantine protocols will not be without limits established against blue mold and other pests. The recently signed protocols allow China to import dried U.S. tobacco that is "free of active tobacco blue mold spores". The words "free" and "active" are key terms that will have to be defined very clearly.



Elsewhere in the world, these requirements have been satisfied with the normal heating that occurs during processing (stemming and re-drying steps). Our best data support that the blue mold pathogen does not survive the processing steps involved prior to storage and shipment of tobacco. The data surrounding the asexual spore stages are strong concerning this point, but there is limited data concerning the oospore stage (sexual stage). Fortunately, the oospore stage is not commonly found in US tobacco during blue mold epidemics, but it does occur sometimes. Consequently, all U.S. tobacco exported to China will be inspected before shipment for blue mold. The details of how that will happen has not been fully established, but it has been made clear that if oospores are found the tobacco can be rejected with regional/county prohibition from exporting tobacco to China.

Since the burley tobacco going into any particular container for shipment could be produced in any tobacco producing county, one county's crop could impact all the crop. The best way to insure blue mold oospores are not present in Kentucky's tobacco is to control blue mold in this region. That involves growing and setting disease-free transplants and preventing blue mold development in the field through site selection, cultural steps, and proper fungicide use.

WHEAT

WHEAT POWDERY MILDEW: MANAGEMENT OPTIONS FOR 2001 by Don Hershman

Currently, all of Kentucky's wheat crop is in the dormant state and, hopefully, it will remain that way until mid-March. Nonetheless, now is a good time to consider some of the disease management options available to you for 2001. I specifically would like to focus on powdery mildew management.

The most economical means of limiting the development of powdery mildew is by planting a resistant or moderately resistant variety. Obviously, that option needed to be implemented last fall at planting. The same applies to the use of Baytan seed treatment. Baytan can effectively control powdery mildew as late as the boot stage - early heading (Feeke's stages 10 -10.3). Thus, Baytan often negates the need for additional powdery mildew

management tactics, such as foliar fungicides.

If you have planted a variety which is susceptible to powdery mildew and did not apply Baytan, there are still several disease management options available to you this spring.

The obvious option is to use a fungicide, if needed, before a serious powdery mildew problem develops. In the past, Bayleton applied at a rate of 1 oz a.i./A sometime between crop stem elongation and flag leaf emergence (depending on disease pressure), was a highly effective and economical way to control powdery mildew. Unfortunately, this product is no longer labeled for wheat. It is still legal to apply "old" product that has wheat on the label. However, it is very unlikely that many of you would be successful in locating a sufficient quantity of old Bayleton.

The fungicides Tilt, Quadris and a newly labeled product, Stratego, may also be used to effectively manage powdery mildew. In addition, Benlate is labeled for wheat, but only moderate control of powdery mildew is likely with that product. Tilt and Stratego MUST be applied before crop flag leaf emergence due to label restrictions. Quadris may be applied up until crop flowering. In order for any fungicide to be of much value in managing powdery mildew, application will need to be made within the same time frame as indicated above for Bayleton (early stem elongation to flag leaf emergence). Later applications will usually produce a poor result because they allow the powdery mildew epidemic to progress too far. The main problem with applying foliar fungicides early is that the crop will be unprotected against mid- to late-season diseases. And, year in and year out, the late-season diseases like leaf and glume blotch and leaf rust take the greatest toll on crop yield. Thus, in anything except a dry year, a second fungicide application will be required to protect the crop after head emergence.

The only legal choices for post-flag leaf emergence disease control are: 1) Quadris, 2) mancozeb, and 3) Benlate plus mancozeb. However, it is highly unlikely any of these fungicides would be economical if an earlier fungicide application had already been made. This is because of the low profit margin currently associated with wheat production. The upshot of this situation is that growers will have to make a choice when field scouting indicates

that powdery mildew is becoming severe. That choice is: spray early to control powdery mildew or wait, allow powdery mildew to develop and make an application later in the season to address late-season disease pressure. When faced with this choice, most will probably opt to apply a foliar fungicide earlier than is desired and hope that late-season disease pressure is minimal. It would probably NOT be prudent to delay the application of a fungicide and allow powdery mildew to develop unchecked since crop yield potential could be severely compromised.

One factor that can help to deter early and severe powdery mildew is proper nitrogen fertility. The point to remember is that an overly lush crop, which can result from excessive levels of nitrogen, will encourage powdery mildew development. Split spring nitrogen programs can be especially problematic since early crop growth (and powdery mildew) is stimulated by the first nitrogen application in February. If powdery mildew management is a consideration, one option is to apply all the nitrogen needed (usually 90-100 lbs N/acre) as a single application in early to mid-March. This was, in fact, the standard nitrogen management program in Kentucky for many years.

If powdery mildew turns out to be a significant problem this season, make plans to plant a powdery mildew-resistant variety or treat susceptible varieties with Baytan before planting next fall.

FRUIT CROPS

AERIAL APPLE BRANCH SWELLINGS - BURRKNOTS OR CROWN GALL?

By John Hartman and John Strang*

With the coming of spring-like weather in late winter, apple growers and gardeners are beginning to prune their apple trees to provide proper tree structure, reduce diseases through sanitation and improved sunlight penetration, and increase productivity. Some growers have noticed on limbs and branches, and even the trunk, uneven-textured swellings on these affected woody tissues. These swellings may resemble crown gall disease. Based on photographs and descriptions recently received from concerned growers and County Extension Agents, the formations being seen on the apple branches and limbs appear to be burrknot.

What causes burrknots? Burrknots occur frequently on many apple dwarfing rootstocks and on the scions of some cultivars such as Empire and Gala. Because of the gall-like appearance of burrknots, they are sometimes mistaken for crown gall disease. Crown gall normally appears near the base of young trees whereas burrknots may appear on the trunk and major limbs and branches of more mature trees. Burrknots are thought to be the beginnings of clusters of aerial roots - above ground. They take several years to develop and, depending on the size of the limb affected, can eventually be several inches across. Certain varieties and rootstocks are genetically predisposed to burrknot. In these varieties, they can be induced by low light, warm temperature and high humidity. These conditions often exist in backyard trees or abandoned orchards not pruned for many years and are less likely to occur in commercial orchards. Burrknots may also develop beneath trunk guards that are used to prevent rabbit and vole injury on trees.

Will burrknots hurt the tree? The tissue which forms a burrknot crowds out the vascular cambium and the phloem in that part of the limb. Fusing of adjacent burrknots and increase in burrknot size, occurring faster than increase in limb circumference, can lead to girdling. A few burrknots will not hurt the tree, but those trees with excessive numbers of them can be weakened, stunted or suffer branch breakage. In addition, burrknots are thought to be sites for insect borer infestations and for fire blight or collar rot infections.

Management. During normal or restorative pruning this year, where there are choices of branches to remove or to keep, growers should remove those with the most burrknots. Burrknots can be surgically removed from larger limbs, though such removal could weaken the limb. Treatments with Gallex, a chemical formulated for treatment of crown gall, can reduce the size of burrknots. Opening up the tree to better sunlight penetration and less humidity will help prevent formation of new burrknots. If this problem persists, it may be time to change to varieties not as genetically predisposed to the problem.

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HOUSEHOLD

OVERWINTERING BUGS NOW APPEARING IN BUILDINGS

by Mike Potter

Many bugs are beginning to appear “mysteriously” inside homes and businesses. Most have either been cluster flies, face flies, ladybugs, 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.

The easiest way to dispose of these overwintering insects found indoors is with a vacuum cleaner, broom or fly swatter. Insecticides are not generally recommended unless the temporary annoyance can no longer be tolerated. Supplemental use of insecticides may be warranted, but only in specific locations and for clients demanding immediate relief of heavy infestations. Aerosol-type foggers containing synergized pyrethrins can be used in attics, but will provide no residual control of insects that have not yet emerged from cracks and protected cavities. (Large numbers of lady beetles, flies or wasps

accumulating in ceiling light fixtures would suggest the attic as a possible treatment area.) Aerosol sprays or foggers are *not* recommended for treatment of bedrooms 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 number of cracks 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 synthetic pyrethroids 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.