



KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE

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TOBACCO

CURRENT BLUE MOLD STATUS

by William Nesmith

A significant change in the blue mold situation has occurred during the past week. On April 13, Dr. Tom Melton, Extension Plant Pathologist with North Carolina State University reported that blue mold was active in a transplant production greenhouse in eastern North Carolina, Lenoir County (Kinston area). The disease samples were submitted to the Plant Pathology Department by plant inspectors with the North Carolina Department of Agriculture. Since plant inspectors were involved, I am assuming that this outbreak is at a commercial greenhouse operation (transplants being sold). Furthermore, some transplant producers in eastern North Carolina may also grow burley plants, for movement into Kentucky or other burley areas, so remain alert to what is happening in North Carolina and anywhere else that is supplying plants to the state/region.

Based on the symptoms described in Dr. Melton's report, they are dealing with systemic blue mold. Furthermore, I suspect the disease may be spreading through the water, which we often see in Kentucky when the float system becomes involved. It is nearly impossible to control the disease once it is in the roots in the float systems if the metalaxyl-resistant strains are involved, because none of the fungicides are effect against that route of infection. Consequently, once I learned of their situation, I expected that it was much worse than

reports indicated. Therefore, I was not surprised this morning (April 17) to receive word that all of the original greenhouse was now involved, a 300 ft unit, with two other houses showing symptoms. Folks, that is the nature of blue mold in a float greenhouse!

In addition, at least 15 acres of plants had already been set to the field from the above sites; the infected plants are also sporulating. The region has experienced blue mold favorable weather during the past few days, so I expect secondary spread has been occurring, both from these houses and from the field site(s). Therefore, Kentucky's tobacco industry needs to remain alert to this situation in eastern North Carolina.

To my knowledge, the blue mold situation remains unchanged in Florida - active.

I urge Kentucky's tobacco industry to take steps to avoid introduction of blue mold on transplants and to keep preventive fungicides sprays in place in ALL transplant production systems in the state. Only two materials are labeled, Dithane and Ferbam. Acrobat MZ IS NOT LABELED. If blue mold develops in a transplant production site, inform the county agent and promptly destroy the crop to protect the community. We would like to obtain a sample of the disease in order to conduct fungicide sensitivity tests, but if that delays destruction of the transplants at the operation, do not wait on us.

WHEAT

WHEAT CURL MITE

by Doug Johnson

Dr. Don Hershman has received several reports of Wheat Streak Mosaic virus. Several of the infected fields are badly damaged, perhaps enough to warrant being destroyed. The question always arises as to whether or not it should have been detected and if something could have been done to avoid the problem.

This virus is moved by the wheat curl mite, a 1/100th inch long pest of wheat and other grasses. It cannot be seen without the aid of a microscope. In any practical sense it would be impossible to observe this pest in the field. If present in large enough numbers, these mites will cause "leaf curling" or rolling inward of the leaf margins, hence the name. However, this symptom is not always present. In any case, much smaller numbers of mites moving the Wheat Streak Mosaic virus will result in a Wheat Streak Mosaic epidemic of much greater importance.

The other great difficulty with diagnosing this pest is the infrequency with which it occurs. We have not had an outbreak of this mite/disease complex since 1987/1988. Given the current situation, it is economically and practically impossible to look out for such a hard to see, randomly occurring pest.

This pest is much more common in western Kansas. Entomologists there indicate that the use of acaricides (insecticides for mites) is not an effective practice. They would be even less effective here because we are less likely to detect the pest in time to make even a partially effective application.

General recommendations include avoidance of early planting, and destruction of volunteer wheat prior to planting. However, our most important ally here would be a normal winter. Like other disease agents, earlier infections and warmer weather produce larger and more intense disease epidemics.

To read more about this problem in Kentucky see: <http://www.uky.edu/Agriculture/Entomology/enthp.htm> When you reach the site select "ENTFACTS" then "FIELD CROPS" and look for Entfact-117 Wheat Streak Mosaic Virus and the Wheat Curl Mite.

You may also wish to see: Sloderbeck, P.E. 1995. Wheat curl mite. Entomology Wheat Insects (L. D.). This can be found on the Kansas Coop. Ext. Service. Web site.

FORAGE CROPS

SCLEROTINIA CROWN ROT IN ALFALFA SEEDED LAST YEAR

by Paul Vincelli

Sclerotinia crown and stem rot has been active recently in some alfalfa fields seeded last autumn. This is not surprising since fields seeded last fall were young enough to be susceptible when the fungus first started to produce infectious spores in late October of 1999. Look for shoots of plants that are wilting and turning tan as they dry. Inspection of the crowns usually reveals white cottony fungal growth under humid conditions. Eventually, the fungus will produce survival bodies called *sclerotia* on diseased plant parts. Sclerotia are initially firm, white cottony, irregularly shaped bodies up to 1/8 inch in size; they turn black and hard as they mature. Cutting open a sclerotium reveals a white (when dry) or gray (when moist) interior.

We also have diagnosed a case of Sclerotinia in alfalfa seeded last spring in central Kentucky. This is unusual but we have observed this occasionally in the past. When the growing conditions are highly stressful, as they were for most of last summer, spring-seeded alfalfa may not develop adequate crown resistance by the time spores start emerging in late autumn, and serious outbreaks can result. My experience is, however, that these spring-seeded stands may be thinned but usually will still remain economical after Sclerotinia activity subsides several weeks from now. In other words, there should be enough resistance in the stand so that a productive alfalfa field will still be present this summer.

At this time there are no rescue treatments that producers can apply. The best strategy is to harvest the field as soon as flower buds first appear (even if it means harvesting when rain is expected, assuming that the field is firm enough to support tractor traffic). This is the standard UK recommendation, because it provides for the highest quality forage and sets up a harvest schedule that provides for the maximum number of cuttings possible. Early cutting also will help clear off the dense canopy that favors Sclerotinia activity, and it will allow penetration of sunlight and air movement so as to inhibit further disease development. As the alfalfa crop regrows, warmer temperatures in May should help limit disease activity.

FRUIT CROPS

POWDERY MILDEW IS APPEARING ON APPLES

by John Hartman

Symptoms of powdery mildew are visible now on leaves and shoots of apples and crabapples. Powdery mildew, caused by the fungus *Podosphaera leucotricha* can seriously reduce the vigor and productivity of apple trees. The mildew fungus may deform, stunt, or kill twigs, leaves, blossoms, and fruit. Signs of the fungus in the form of gray felt-like patches occur on leaves and on current seasons twig growth. Leaves may be distorted, appearing crinkled, folded lengthwise, and thickened. Mildew infections on fruit can result in net-like russetting similar to that caused by phytotoxicity from prebloom copper sprays. Most fruit infections occur at pink or early bloom stages. Thus, pink sprays can be important for protecting fruit from mildew. Normally, fruit infections are relatively uncommon and seem to occur only on the most susceptible cultivars, and then only in years that are unusually favorable for mildew development during the prebloom period.

While last year's dry weather and mild winter may have been unfavorable for apple scab it may have been quite favorable for powdery mildew. Wetting periods are not required for powdery mildew infection; indeed the fungus may actually be suppressed during very rainy seasons. Powdery mildew infections on leaves can occur when temperatures are above 50 F and relative humidity is above 70%, but not actually wet. Mildew overwinters in infected buds. It especially survives well through mild winters such as the one just past. Conidia from these primary infections become available to cause new infections in early spring before the apples bloom.

Mildew can be controlled with protectant fungicides such as sulfur if sprays are begun at tight cluster. Sterol-inhibitor (SI) fungicides such as Nova, Rubigan, and Procure have post-infection activity against mildew, and the first SI spray for mildew can therefore be delayed until pink. Highly susceptible cultivars such as Ginger Gold should definitely be protected with an SI fungicide beginning at Pink. The cultivars Cortland, Granny Smith, Jonathon, and Mutsu are also considered fairly susceptible to mildew. An SI fungicide is also

recommended at pink for orchards that had mildew problems last year. Where mildew was well-controlled last year, the first SI spray can be delayed until bloom or petal fall provided that SI fungicides are applied at least three times during the period from bloom to second cover.

When choosing fungicides to control scab and mildew, remember that mildew is NOT controlled by dodine, captan, Vangard, Polyram, or the mancozeb fungicides. Benlate and Topsin M may still control mildew in some orchards, but resistant strains of mildew as well as of scab are present in many orchards. Sulfur applied at 3 to 5 lb/A works reasonably well as a mildew and scab suppressant, but SI fungicides are the only option for high-inoculum orchards and for highly susceptible cultivars. Bayleton is labeled for mildew and rust diseases but not for scab. Rubigan, Nova, and Procure will provide good control of mildew when applied at rates recommended for scab control.

APPLE IPM by Ric Bessin

Codling moths have begun to show up in pheromone traps this spring. Although the April 9 frost might have injured blooms in some orchards, a near normal crop can be expected in many others. Now is the critical time to monitor for the moths in commercial orchards. Be sure that traps have fresh pheromone lure (less than one month old) and check traps daily until the biofix is reached. The biofix is the date when the fifth codling moth is trapped.

After the biofix has occurred, degree days are calculated on a daily basis and a running total is kept (see "Predicting Insect Development Using Degree Days" in ENTFACT-201). The codling moth has a 50°F threshold temperature. These degree day accumulations are summed until they reach 250. At 250 DD an insecticide is applied for control which coincides with egg hatch. If codling moths are abundant (more than 10 per trap per week), a second spray may be necessary 7 to 10 days later.

Codling moth trap catch records need to be maintained throughout the summer to monitor additional generations. However, after the initial biofix it is only necessary to examine the traps twice a week. A threshold of five moths per trap per week is used to determine if there are sufficient levels of moths to warrant an insecticide application.

In orchards where there is not enough crop to

justify cover sprays, this summer, then a reduced program that only protects the tree is necessary. This would mean that sprays to control codling moth and plum curculio are not needed. However, sprays to control San Jose scale and potato leafhopper (attacking young trees) should be used if necessary.

LAWN & TURF

OLD KENTUCKY BLUEGRASS LAWNS SHOWING VARIOUS DISEASES by Paul Vincelli

For many years now, tall fescue has been the grass species of choice for new lawns in Kentucky. However, homes, landscapes, parks, and others swards that are 20+ years old often are composed primarily of older varieties of Kentucky bluegrass. In these swards, several diseases have been active.

Leaf spot & melting out. Irregular areas of the lawn that appear stunted and yellow may have this disease. Look for brown or purple oval spots on affected leaf blades and sheaths. The spots often develop a tan center as they expand.

Stripe smut. Typically this disease appears as stunting in clumps of grass 2-3 inches across, although affected areas may be larger if clumps coalesce. Affected tillers exhibit gray or pale yellow foliage that turns tan as it dries. Look closely at leaf blades for dark brown to black powdery streaks running parallel to leaf veins; these are masses of teliospores of the strip smut fungus.

Powdery mildew. Anywhere that Kentucky bluegrass grows in the shade, powdery mildew may develop. This fungal disease gives the leaf blades a whitish, powdery appearance, as though someone sprinkled talcum powder on the leaves. Affected leaves are initially green underneath these infections, but they soon turn yellow and even tan if they desiccate.

For all three diseases, renovation to tall fescue is the best solution. Application of fungicides at this time will do little or no good for leaf spot/melting out and stripe smut, and powdery mildew will return after the fungicide wears off if the site is too shady for Kentucky bluegrass. If renovation is considered, use the time now to obtain and read copies of the Extension publications, "Improving Turf Through Renovation" (AGR-51), "Lawn Establishment in Kentucky" (AGR-50), and "Selecting the Right Grass for Your Kentucky Lawn" (AGR-52), so as to

be prepared for the renovation as summer winds down.

SHADE TREES & ORNAMENTALS DON'T GET SLUGGED THIS SPRING by Ric Bessin

Slugs are common pests during cool, wet weather and can damage many types of plants in the garden. Slugs are fleshy, slimy animals that feed mainly at night. In order to survive, slugs require cool, moist places in which to hide during most of the day. Slugs may range in color from light yellow to gray, to black. Cool, wet spring conditions favor slugs and the problems they cause in the garden.

Slugs feed by rasping on leaves, stems, flowers and roots of plants. They may produce holes in the leaves or just scar the leaf surface. Tender, young, small seedlings in the garden can be especially vulnerable to damage by these creatures. Some small seedlings may be killed with intense slug damage. Silvery slime trails on the ground, plants, or even the side of your house are evidence of slug infestations. Here are a few tips on how to prevent or reduce slug problems around the home:

First, don't give slugs a place to hide. Keep the areas around bedding plants free of plant debris such as leaves, prunings, and pulled weeds. Boards, stones, or tires that provide cool moist hiding places for slugs during the day should also be removed. Prune low branches of trees or shrubs which may touch the ground. Rake back the leaves or mulch in order to allow the ground to dry and make the area less favorable for slugs.

Metaldehyde bait can be used to kill slugs. Read the label carefully. Do not allow pellets to come in contact with parts of plants that may be used for food. This needs to be reapplied following rain or irrigation. Use of beer traps have been very effective for some. Empty cans buried up to the lip and partially filled with beer can be effective traps to lure slugs. The beer will need to be changed every few days to remain effective. Non-alcoholic beer has been shown to be more effective than other types.

Barriers of diatomaceous earth, wood ash, lime, sawdust, copper striping, and salt embedded plastic strips can be used around bedded plants. Barriers of diatomaceous earth, sawdust, wood ash, and lime may need to be replaced after each rain. Some of these tactics are more effective than others. A combination of two or more of these measures should help control most slug problems this spring.

HOUSEHOLD

MANAGING CARPENTER BEES

by Mike Potter

If you haven't been receiving calls about large, black bees hovering around the eaves, decks, and wood siding of your clients' homes, you will shortly. These are probably carpenter bees searching for mates and nesting sites. Carpenter bees cause - cosmetic and structural damage to wood. They can be quite intimidating to homeowners and have the potential to inflict painful stings.

The Problem- Carpenter bees are similar in appearance to bumble bees, but have different nesting habits. Bumblebees nest in the ground, whereas carpenter bees tunnel into wood to lay their eggs. Bare, unpainted, or weathered softwoods are preferred, especially redwood, cedar, cypress and pine. Painted or pressure-treated wood is much less susceptible to attack. Common nesting sites include eaves, fascia boards, siding, wooden shake roofs, decks and outdoor furniture.

Carpenter bees overwinter as adults in old nest tunnels. After mating, the fertilized females excavate tunnels in wood, laying their eggs within a series of small cells. The cells are provisioned with a ball of pollen on which the larvae feed, emerging as adults in late summer. The entrance hole and tunnels are perfectly round and about the diameter of your finger. Coarse sawdust, the color of fresh cut wood, is often seen beneath the entry hole, and burrowing sounds may be heard within the wood. Female carpenter bees may excavate new tunnels or enlarge and reuse old ones. Serious damage can result when the same piece of wood is utilized for nesting year after year.

Males are often aggressive, hovering in front of people who are around the nests. The males are harmless, however, since they lack stingers. Female carpenter bees can inflict a painful sting, but seldom will unless handled or molested.

The Solution- The best time to control carpenter bees is before the tunnels are fully constructed. For homeowners, liquid sprays of Sevin, Dursban, or a synthetic pyrethroid (e.g., Spectracide® Bug Stop, Ortho® Home Defense System) can be applied to wood surfaces attracting large numbers of bees. Residual effectiveness of most spray formulations sold to homeowners is only about 7-14 days, so the treatment may need to be repeated. Carpenter bee tunnels that already have been excavated can also be treated by puffing an insecticide dust (e.g., Sevin, Drione) into the nest opening. Aerosol sprays sold for wasp or bee control also are effective and are often more convenient than dusts for the homeowner to apply. Although carpenter bees are

less aggressive than wasps, female bees provisioning their nests will sting. Treatment is best performed at night or while wearing protective clothing.

Leave the holes open for a few days after treatment to allow the bees to contact and distribute the insecticide throughout the nest galleries. Then plug the entrance hole with a piece of wooden dowel coated with carpenter's glue, wood putty, or other suitable sealant. This will protect against future use of the old nesting tunnels, as well as moisture intrusion and wood decay.

Carpenter bees normally will not tunnel into painted wood. Therefore, a more permanent solution is to paint unfinished wood surfaces, especially those with a history of being attacked. Wood stains and preservatives are less reliable than painting, but may provide some degree of repellency versus bare wood. To further discourage nesting, garages and outbuildings should be kept closed when carpenter bees are actively searching for nesting sites.

DIAGNOSTIC LAB HIGHLIGHTS

by Julie Beale and Paul Bachi

Diseases diagnosed this week have included wheat streak mosaic virus of wheat; Sclerotinia crown rot of alfalfa (also on alyssum in the landscape); Pythium root rot, Rhizoctonia damping-off, and bacterial soft rot (Erwinia) coming in on injured tobacco plants; Botrytis blight of begonia and petunia in the greenhouse; black root rot of inkberry in the nursery; and stress and herbicide damage on various shrubs and trees in the landscape.

INSECT TRAP COUNTS

UKREC, Princeton, KY - April 7-14

Black cutworm	27
True armyworm	85

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 name