



KENTUCKY PEST NEWS

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TOBACCO

CURRENT BLUE MOLD STATUS

By William Nesmith

County Extension Agents reported a sharp increase during the week in new symptoms of blue mold appearing in vigorous crops of tobacco. This was what we had predicted in the last two reports, due to the cooler temperatures and night moisture experienced last week. Leaf vein and midrib strikes were especially common in the upper foliage in northern and central Kentucky. Some agents also reported that high numbers of very small lesions and fleck-like lesions were common.

New sporulation and new infection rates were very low in most but not all areas - much of this week because nighttime humidity was too low. We missed this prediction, because the advanced weather forecast used called for most of the state to experience the wet weather that did develop north of us. Had that wet weather developed over the western two-thirds of Kentucky during mid-week, a major blue mold epidemic would have occurred from Owensboro east to Morehead. However, only parts of western Kentucky and southern Indiana actually experienced the wet weather, so it is those areas where blue mold should increase rapidly.

Fortunately, most of the western areas that received the wet weather this week had very low levels of blue mold ready to sporulate when the rains came, the exception being around Owensboro. Any area that had active disease mid-week and received fog with either rain or irrigation between Aug 3-6 (timed when new lesions were ready to sporulate) could experience a very sharp increase in blue mold unless timely fungicide coverage was in place.

A major exception to the blue mold development pattern is the Owensboro area, where strong sporulation continued all week driven by heavy fog and rain. Where rain or fog was present mid-week, such as western Kentucky and southern Indiana, expect an increasing and significant threat to crops of vigorous tobacco (both dark and burley), especially in fields that already have active disease. The disease could flash while fields are too wet to enter to spray. Furthermore, with closed canopies, coverage will be difficult.

Most areas of Kentucky, southern Ohio and West Virginia have gone several days without rain or fog, which sharply reduced the blue mold threat to most of the region's tobacco production. Some areas received rain over the weekend, and heavy fog returned on Aug. 10. New infections are likely where new sporulation is occurring.

Agents continue to report that the level of activity is highly variable within most counties, ranging from no disease to serious damage in neighboring fields. As normally happens, blue mold activity declines sharply with topping and maturity of the crop, but strong activity is continuing after topping in crops of rapidly expanding tobacco under good soil moisture and high fertilization. Also, sucker regrowth from harvested crops will soon begin to support large populations of the blue mold fungus, increasing the inoculum load in the community. This risk can be easily eliminated by preventing sucker regrowth through timely destruction of stalks and roots and seeding of cover crops.

At least half the crop remains immature and susceptible to blue mold. Be especially protective of young crops, those growing fast, located in foggy areas, those under irrigation, and those with ground suckers. Foliar fungicide programs should be maintained through topping stage, especially on crops of lush tobacco located in shady or foggy areas. Growers in all areas of the state need to re-evaluate their blue mold risk due to the highly variable weather experienced this week. For example, parts of western Kentucky have returned to high risk flash points, while much of northern and central Kentucky has moved from increasing risk to a declining risk situation, but is still very sensitive to moisture and temperatures during the weekend of August 8-9. Remember, blue mold is a very weather-sensitive disease!

TOPPING ENDS APHID THREAT FOR FIELD

By Lee Townsend

Yield losses due to feeding by tobacco aphids are caused by sap removal from the developing leaves at the tops of the plants. Infested leaves do not expand to their full potential nor do they attain their full weight. This occurs slowly and over a long (6 to 8 week) period.

Topping the plants not only removes the greatest concentration of aphids but also the small, tender leaves on which they prefer to feed. Aphids present on the discarded tops will remain there and will continue to feed until the leaves dry completely. Few, if any, will find their way back to a plant. Aphids present on tobacco that has been topped are not a cause for concern at this time in the season.

There is a lot of late tobacco and winged aphid flights have been intense over the last few weeks. Watch for buildups in these fields and treat when 20% or more of the plants have aphid colonies in the bud area.

TOBACCO HORNWORM MOTHS FLYING **by Lee Townsend**

Tobacco hornworm moths have been showing up in the floral scent-baited trap in Fayette County. The moths are attracted to fragrant flowers where they feed on nectar. Females lay 75 to 150 eggs a night for 6 to 10 nights (600 to 800 per female). Individual eggs are glued to the underside of leaves in the upper 1/3 of the plant. They hatch in 3 to 8 days, depending on temperature, and the larvae begin to feed. The larval feeding period lasts for 16 to 20 days. Most all of the feeding is done from the time the larvae are 1-1/2" long until full grown. It takes just over 60 hornworms to eat the equivalent of a pound of cured tobacco.

Hornworms will feed on cut, wilting tobacco in the field, and will continue to feed on plants hanging in the barn. Check fields regularly for hornworms from topping until harvest. A clean-up spray, if needed, will keep you from taking hornworm infested plants to the barn. There is no control for them after plants are housed. *Bacillus thuringiensis* products, such as Dipel, are excellent choices for last minute applications because they are harmless to humans and there is no harvest delay.

PASTURES

NEW ALLEGHENY MOUND ANT LOCATION

By Lee Townsend

Pat Hardesty, Taylor county ag agent, reported very large ant mounds on a farm in the county. There are not many places in Kentucky where you can find ant mounds that are 2' to 3' in diameter and about knee-high. That describes the work of the Allegheny mound ant, a species that occurs in eastern and central parts of the state. Taylor county is outside our distribution records.

The Allegheny mound ant is a native species that can be found along the Atlantic coast from Nova Scotia, Canada to Georgia. Known infestations in the Commonwealth range from eastern Kentucky to Franklin, Jefferson, Robertson, and Shelby counties

in the central part of the state. In infested areas, mounds tend to be built in pastures that are grazed regularly but not mowed very often. They also can become pests in Christmas tree plantings, nurseries, and turf.

These red and black ants build large mounds at the colony entrance using the soil that they remove as they dig tunnels and chambers deep in the ground. A 5-month-old mound can be about 2 feet wide and 8 inches tall. In about two years, mounds can be up to 3 feet tall. The underground tunnels may go down 3 feet into the soil and extend out to about 4 feet.

In addition to building large mounds, the ants inject surrounding vegetation with formic acid to clear the area. Small trees and shrubs within 40 to 50 feet of large mounds can be killed. Two- to 5-year-old trees near large mounds are especially susceptible to damage but trees up to 8' tall can be killed. If the ants become established in lawns, they can kill the grass around the mound and their hunts for food and can make work or play in the area very unpleasant. These ants will bite if the colony is disturbed.

Entfact 015 contains more information on this ant and describes control measures. I would appreciate hearing from you if you are aware of these ants in your area so that we can get a clearer picture of their distribution.

CORN

GRAIN PROTECTANTS FOR CORN

By Doug Johnson

Title sound familiar? Didn't we just do this? Well, yes, sort of. We did go over the various storage tips for small grains in a previous issue of the newsletter. But now it is time to consider corn. A few considerations have changed but in the main the important storage concerns for small grains are also the important storage concerns for corn. First and foremost is 'store clean dry grain in clean dry bins'. You can improve your storage success by adding other management techniques but this should be your base practice.

Here are some tips for your consideration:

- Repair any punctures of roof and walls.
- Remove old grain from the bins.
- Clean bins AND harvest equipment of old grain.
- Remove grain spilled around bins.

- Consider treating the inside of empty bins with an insecticide.
- Handle grain to prevent 'fines' and 'cracked' grain.
- Dry to a moisture content of 12% or less.
- Consider applying a grain 'protectant' or 'capout' treatment especially for long term storage.
- Inspect bins regularly.
- Balance bin temperature with outside temperature while trying to keep it between 40 and 60 degrees.

If you intend to apply 'protectant' or 'capout' insecticides, recommended products maybe found at the end of the Corn Insecticide Recommendations, ENT-16. Because corn is harvested later in the year, and thus the prospect of cooler temperatures is more likely, protectants are likely to last longer. However, they are still primarily for long term storage. Additionally, there are no substitute for storing grain in good condition and in clean bins.

EL NIÑO, GONE BUT NOT FORGOTTEN

By Ric Bessin

Well, the experts say that the El Niño has disappeared. It may have but its effects on some insect populations are still being felt. In particular, due to the warm, early-spring temperatures, European corn borer development had been running 10 days to two weeks ahead of schedule. Does that make a difference at this time of the year? In a word, yes. We usually get two full generations of the European corn borer and a partial third. This year we will have a complete third generation in much of the state. Typically, the third generation is larger than the second generation.

What does this mean? Corn producers using full-season, Bt-corn hybrids should have no problems. However, late-planted corn and replanted corn should be monitored regularly for corn borer activity. Pepper producers will need to maintain corn borer monitoring and management programs through mid September.

VEGETABLES

COLORADO POTATO BEETLE MANAGEMENT

By Ric Bessin

At this time of the year, we receive many calls about Colorado potato beetles that cannot be controlled with insecticides. They can be very difficult to control now. It is comparable to trying to stop flooding after the dam has failed. The Colorado potato beetle is notorious for its ability to rapidly develop resistance to insecticides that are used repeatedly for control. Waiting until mid summer, then trying to control this pest using insecticides alone, often leads to poor control and disappointment. Attaining early control of Colorado potato beetle in the spring is critical. Insecticides available to home owners include diazinon, Sevin, New Spectricide, Thiodan, Methoxychlor, Align, and *Bacillus thuringiensis* (Bt) var *tenebrionis*. Bt var *tenebrionis* is effective against small larvae (less than 1/4") and should be applied at egg hatch or when larvae are first seen. A premature treatment may lose much of its effectiveness before the eggs hatch. Larger larvae are more difficult to control with Bt. Align, an extract of the neem seed, prevents the larvae from developing normally.

Frequently, control failures with Colorado potato beetle are due to other factors besides just insecticide resistance alone. Timing of sprays are critical for control. Overwintering beetles are attracted to fields over a period of several weeks, spraying an insecticide too early may only control a portion of those beetles. However, waiting until larvae are nearly full grown also increases the chances of control failure. Small larvae are much easier to control with an insecticide than large ones. Using the correct amount of insecticide as well as obtaining complete coverage of the plants is important.

Insecticides should only be used when needed. Potato plants can lose up to 30% of their foliage without yield loss. Generally, insecticides do not need to be applied unless there is more than an average of one beetle or larva per plant. Additionally, some beneficials, such as birds, predatory stink bugs, and parasitic flies will help to reduce Colorado potato beetle numbers somewhat.

Other non-chemical control measures such as hand picking of adult beetles and immature stages is encouraged as this will aid to delay the development of resistance. Hand picking can be

particularly effective in reducing the numbers of overwintering beetles coming to the young plants in the spring. Reduction in the number of colonizing beetles in the spring greatly assists mid summer control.

DOWNY MILDEW IN FALL CUCURBIT by William Nesmith

Last week I issued an advisory for powdery mildew in fall cucurbits. This week's disease is downy mildew. Although the names are similar, these are very different diseases that require different chemicals to achieve control.

Scattered but strong outbreaks of downy mildew activity have been observed recently in pumpkins, winter squash, and yellow summer squash throughout eastern and central Kentucky. Fungicide spray programs were weak or absent in all the cases investigated and serious losses had already occurred by the time the grower noticed the problem. Powdery mildew was also present at low levels at some of the sites.

First symptoms of downy mildew in cucurbits are yellowish, irregular to circular spots on the leaf. Lesion size is greatly impacted by weather. Small lesions can quickly scald or turn brown in warm, wet weather. Often when downy mildew hits, the foliage is rapidly destroyed before the grower recognizes that a problem exists. A blue to gray fungus (mildew) can be found on the bottom side of the leaf early in the morning and while the lesions are young. The downy mildews can quickly destroy the foliage of members of the cucurbits, usually developing from the center of the plant towards the new growth. The disease can go from infection to symptoms and sporulation in 4 days during late July, August and September in Kentucky. The Ohio Valley often experiences high daytime humidities in August, which develop into heavy to patchy fogs nightly. When there is fog with cool nights in late summer (temperatures in the 60's), expect downy mildew to operate and prepare accordingly.

SPRAY PROGRAM: A regular spray program with Bravo, maneb/mancozeb, or copper is needed to suppress development of downy mildews in fall plantings of commercial cucurbits in Kentucky. Once downy mildew appears or if Tobacco Blue Mold Watches/Warnings are issued (which is currently the case statewide), immediately shift the program to include Ridomil/Bravo, Ridomil/Copper, or Aliette on an alternate weekly

schedule with the protectant fungicide being used. Also keep the systemic fungicides for powdery mildew control in place (Bayleton, Benlate, or Topsin) on a 14-day schedule. Basically, this means to use a weekly spray schedule, one week using a protective-type fungicide plus a powdery mildewcide and the next a protective-type fungicide plus a downy mildewcide. See ID-36 - Commercial Vegetable Crops Recommendation - for more specifics.

LAWN AND TURF

ANT SWARMERS CAN FILL AFTERNOON SKIES

By Lee Townsend

Yellow-orange winged ants can cloud the afternoon skies in late summer. Large yellow ants are also known as citronella ants because of the lemony odor given off when they are crushed. These ants nest in the soil under logs, rocks, patios, or concrete slabs but can be abundant in open fields. Usually there is a large pile of fine soil particles at the nest entrance. Large yellow ants feed almost entirely on "honeydew" gathered from root aphids and other sucking insects. Large swarms can be an annoyance to anyone who is outdoors at the peak of ant activity. Some are concerned that these are termites.

Large yellow ants are normally not a household problem unless there are colonies along the foundation and the workers forage in the structure. Direct treatment of the nests, easily recognized by the large dirt piles at the entry, is the key to control in this situation. Ant baits are not too effective against these ants.

SHADE TREES AND ORNAMENTALS

GIANT CATERPILLARS ACTIVE NOW

By Lee Townsend and Ric Bessin

Several large caterpillars can be seen in late summer. Often they are caught as they crawl across lawns in search of a pupation site. The common ones being sent in to us now are the cecropia caterpillar and the hickory horned devil. Both are spectacular, neither is harmful.

The cecropia moth caterpillar takes most of the summer to mature and is up to four inches long when fully developed. They are bluish green and

there is a pair of yellow projections along the back on each body segment. The first three pairs are yellow balls with black spines. Cecropia caterpillars feed mainly on cherry, plum, apple, elderberry, box elder, maple, birch and willow, but will also feed on linden, elm, sassafras and lilac.

In early fall the mature caterpillar spins a spindle-shaped cocoon which is about three inches long. The cocoon is attached along its full length to a twig on the host tree. - Inside the cocoon the caterpillar changes to a pupa, the life stage in which it spends the winter.

The hickory horned devil is the largest of the silk moth caterpillars, commonly reaching five inches in length. The long barbed horns on the forward end of the body make the caterpillar look intimidating but it is entirely harmless to humans. These rotund caterpillars feed on hickory, sumac, sweet gum, lilac, persimmon, ash and beech. They pupate in the soil.

Information on these and other impressive caterpillars is available in Entfact 008 Saturniid Moths. Color pictures of many can be seen on our web site at - www.uky.edu/Agriculture/Entomology/entfacts/misc/

CLEMATIS LEAF SPOT AND STEM ROT WAS ACTIVE THIS YEAR

By John Hartman

Clematis is grown throughout Kentucky as a summer perennial flower. Its large blooms can provide a colorful display and its climbing growth habit makes it suitable for trellises to form screens and shade a porch or patio. Clematis is very susceptible to leaf spot and stem rot disease, especially when warm, rainy weather favors the disease early in the season. This sometimes devastating disease is caused by the fungus *Ascochyta clematidina*.

In the landscape, the most devastating phase of the disease is the stem-girdling canker or stem rot which can cause entire vines to suddenly wilt and die. Cankers begin as reddish lesions, but with age, and as they girdle the stem, they may turn gray. This fungus also causes a discrete, irregularly-shaped dark brown leaf spot which can progress down the leaf petioles and into the stem, leading to stem rot. The primary infections develop from pycnidia, fruiting bodies of the fungus, which develop on the cut stumps of the vine.

Clematis leaf and stem spot is difficult to control, but several practices will aid in managing this disease. Thin out the vines to improve air movement and ventilation in the planting. Remove and destroy all diseased leaves as they occur so the disease doesn't spread to the stems. Likewise, remove and destroy infected vines to reduce inoculum. The fungicide thiophanate-methyl (Cleary's 3336) is labeled for Ascochyta leaf blight. Applications should be made early in the spring and special attention should be given to getting good coverage of the stumps from previous years growth which may harbor the fungus. Different Clematis hybrids and cultivars vary in their susceptibility to Ascochyta blight. If the particular cultivar in the landscape consistently dies back, perhaps it is time to change to a new cultivar and a new planting site

DIAGNOSTIC LAB-HIGHLIGHTS

By Julie Beale and Paul Bachi

Gray leaf spot has been diagnosed on **corn** in western Kentucky; also sudden death syndrome on **soybean**. A number of **tobacco** diseases are still prevalent, including **black shank, soreshin, Fusarium wilt, bacterial hollowstalk, frog-eye and target spot**. The aphid-borne viruses are beginning to appear as is typical this time of year.

On fruits we have seen **powdery mildew** on **grape**

and **scab, cedar-apple rust** and **bitter rot** on **apple**.

In the landscape we have diagnosed **leaf blister** on **oak** and **maple**, **bacterial scorch** on **oak** and **maple** (symptoms appearing earlier than usual), **Cercospora leaf spot** on **mulberry** and **redbud**, **Pythium root rot** and **Rhizoctonia crown rot** on **petunia**. On commercial flower crops, we have seen **Pythium root rot** and nutritional problems on **chrysanthemum** and **Rhizoctonia crown rot** on **poinsettia**.

Diagnoses of vegetable diseases this week have included **bacterial leaf spot, Fusarium wilt and anthracnose** (fruit lesions) on **pepper, downy mildew** on **pumpkin**, and **root knot nematode** and **tomato mosaic virus** on **tomato**.

INSECT TRAP COUNTS

August 3-10

European Corn Borer	33
Southwestern Corn Borer	30
Fall Armyworm	87
Corn Earworm	63

Lee Townsend, Extension Entomologist