FRUIT CROPS

• Peach bacterial spot

SOYBEAN

• Giant ragweed emergence contributes to control problems in soybeans

STORED GRAIN

• Insecticides for use in stored small grains

VEGETABLES

• Phytophthora diseases of vegetable crops - a wake up call!

• Fourlined plant bugs spot mint

PEACH BACTERIAL SPOT

by John Hartman

Peach bacterial spot, caused by *Xanthomonas campestris* pv *pruni*, may appear on some cultivars in years with stormy, rainy weather. The disease is sporadic, but potentially devastating to peaches and other stone fruits in Kentucky. Entire crops can be lost in years with warm, wet weather.

**Symptoms.** Leaf lesions start out small, angular, gray, and water-soaked, appearing on the leaf undersides, especially along the mid-vein, tip or margins. Lesions become brown to black and generally angular in outline. Often the centers of spots fall out, and margins have a reddish coloration; severely infected leaves turn yellow and drop. Infected fruit becomes pitted and cracked. Elliptical cankers develop on current-year or 1-year-old twigs and branches.

**Disease development.** The bacterial spot pathogen overwinters on twigs and in buds, sometimes with canker symptoms, sometimes not. In the spring, bacterial populations multiply, and primary infection occurs during wet conditions. Water congestion (water soaking of leaf intercellular spaces due to rain being driven into the stomata) of plant tissue is important for disease development, and outbreaks are especially severe following storms with wind-driven rain. Abrasion by wind-borne sand injures tissue and leads to further infection. Warm, rainy weather throughout the season is conducive to secondary infections.

**Disease management.** Diseases caused by bacteria are nearly impossible to manage when conditions favor bacterial growth and bacterial spot of stone fruits is no exception. The following are important to disease management.

• Peach varieties vary in their susceptibility to bacterial spot.

• Resistant - Candor, Cresthaven, Earliglo, Encore, Harbelle, Harbinger, Harken, Jerseydawn, Norman, Pekin, Ranger, Redkist, Redskin.

• Tolerant - Biscoe, Earlirio, Garnet Beauty, Glohaven, Jerseyqueen, Loring, Rio-Oso-Gem, Sentinel, Springold, Summerglow, Sunqueen, Sunshine, Surecrop, Topaz.

• Least resistant - Autumn glo, Blake, Harmony (Canadian), Jerseyland, Redcrest, Redhaven, Sweet Sue, Suncrest, Sunhigh, Triogem, Tyler, Velvet, Washington.

• Fertilize trees adequately, but not excessively because succulent tissues are very susceptible to bacterial spot.

• Minimize sand abrasion with cover crops and windbreaks.

• Chemical control is sometimes unreliable. However, dormant application of fixed copper may reduce early bacterial populations. The antibiotic, oxytetracycline (Myco-Shield Agricultural Terramycin 17 percent SP), can provide some control when used as the label directs. If the disease has been a problem for growers in the past, they will want to undertake a complete spray program the next year beginning at shuck-split and continuing at 7-day intervals until 3 weeks before harvest.
SOYBEANS

GIANT RAGWEED EMERGENCE CONTRIBUTES TO CONTROL PROBLEMS IN SOYBEANS
by James R. Martin and Charlie Slack

The pattern of emergence of giant ragweed (also known as horseweed) may vary depending on biotype. Research in the Midwest indicated that plants from Iowa emerged in a short span of time compared with some of the biotypes collected in Illinois and Ohio. The fact that research in Illinois during the 1970's indicated that giant ragweed emergence pattern was relatively short, leads some scientists to speculate that this weed may be adapting to survive control programs in grain crops.

In Kentucky, giant ragweed usually begins emerging in March and may continue into late June or early July. This prolonged emergence makes it difficult to achieve season-long control of this problem in soybeans.

A study in Lexington last season indicated that timing of application of certain postemergence herbicides as well as crop row spacing impacts giant ragweed control in soybeans. Results showed that delaying applications of Roundup Ultra Max in Roundup Ready soybeans until giant ragweed was 12 inches tall, provided better control than when weeds were 4 or 8 inches tall. The earlier applications appeared to control giant ragweed present at the time of application but did not control plants that emerged after treatments were applied.

Soybeans that were planted in 7-inch row spacing provided faster shading from the crop canopy and improved control of giant ragweed compared with soybeans in 30-inch row spacing. However, the level of giant ragweed control did not exceed 80% for the early applications in 30-inch or 7 inch wide rows.

Giant ragweed control with FirstRate was good regardless of timing of application or row spacing. FirstRate has soil-residual activity that contributed to the control of late-emerging weeds following applications.

Table 1 lists postemergence herbicides used in soybeans and maximum size of giant ragweed. While glyphosate and FirstRate/Amplify are capable of controlling large giant ragweed relative to other postemergence herbicides, there are limits to how consistent they will perform across a wide variety of environmental conditions. It is also worthy to note that although ALS-resistant giant ragweed has not been confirmed in Kentucky, such biotypes have been observed in Ohio, Indiana, and Illinois.

Table 1. Timing of Postemergence Applications for Giant Ragweed Control in Soybeans (Lexington, KY 2002)

<table>
<thead>
<tr>
<th>Herbicide</th>
<th>Rate</th>
<th>Giant Ragweed Control (%)</th>
<th>Giant Ragweed Size</th>
<th>Giant Ragweed Size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>4&quot;</td>
<td>8&quot;</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Roundup UltraMax +AMS</td>
<td>26 oz/A, 10 lb/100 gal</td>
<td>33</td>
<td>47</td>
<td>92</td>
</tr>
<tr>
<td>FirstRate + Surfactant + Liquid N</td>
<td>0.3 oz/A, 0.25 %, 2.5 %</td>
<td>96</td>
<td>97</td>
<td>98</td>
</tr>
</tbody>
</table>

LSD = 8%

1 Roundup Ultra Max at 26 oz/A provides 0.75 lb ae glyphosate acid per acre. This is equivalent to 22 oz of Roundup Weather Max/A or to 32 oz of Touchdodown IQ/A

Table 2. Maximum Size or Growth Stage of Giant Ragweed for Selected Soybean Herbicides.
Herbicide | Size/Growth Stage | Herbicide | Size/Growth Stage
---|---|---|---
Amplify 0.3 oz/A | 10" | Raptor 5 oz/A | 5"
Basagran 2 pt/A | 3" | Reflex 1.5 pt/A | 4 Lf
Classic 0.75 oz/A | 6" | Roundup WeatherMax | 1
 | | 16 oz/A | 6"
 | | 22 oz/A | 12"
Cobra 12.5 oz/A | 6 Lf | Stellar | 5 oz/A | 2 Lf
 | | 7 oz/A | 4 Lf
Extreme | 9" | Storm | 6"
Flexstar 1 pt/A | 4 Lf | Synchrony 0.5 oz/A | 4"
Flexstar 1.5 pt/A | 8 Lf
Front Row 0.42 oz/A | 10" | Touchdown IQ | 1
 | | 32 oz/A | 6"
 | | 48 oz/A | 12"
Pursuit 1.44 oz/A | 3" | Ultra Blazer 1.5 pt/A | 3"

1 Consult labels of other glyphosate products for recommended rates

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STORRED GRAIN

INSECTICIDES FOR USE IN STORED SMALL GRAINS
by Doug Johnson

Earlier this spring you may have seen an article on the status of insecticides for use in stored grain.
(See: www.uky.edu/Agriculture/kpn/kpn_03/pn030210.htm#newsto ). A few things have settled out since then so let’s review what is recommended for use on small grains.

Empty Bin Treatments
For use in the treatment of empty bins, our recommendations have not changed. We still recommend the use of Tempo® SC Ultra (cyfluthrin). Reldan® may also be used. However, if you use Reldan® on your grain as a protectant, then you should use a different product on your empty bins.

We do NOT recommend the use of malathion. Most malathion products have lost their stored grain labels. Insect control with this product is not sufficient and overuse of malathion, because of the lack of control, is producing unacceptable pesticide residue on some grain.

Grain Protectants
A new product has entered the market. Storicide™ is a mixture of chlorpyrifos-methyl (which you know as Reldan) and cyfluthrin (which you know as Tempo). This product is expected to provide good control of both “bran bugs” (flour beetles, flat grain beetle, rusty grain beetle, etc) which are secondary feeders, and our most important beetle pest, the lesser grain borer, which is a primary feeder.

Users are advised to notice the following warning that is on the label of this product. It states, “Cyfluthrin, a component in STORCIDE does not have CODEX MRLs. Please check with your grain handler before exporting.” Codex MRLs are values of pesticide residue on the grain that are used by many countries to regulate exposure to pesticide. If your grain is not going out of the country then this is not important. If, however, it is destined for international trade it might be good to let your buyer know ahead of time that you intend to use this product.

Reldan®, as of this time, is still labeled for use as a protectant on stored grain. How long this will last is anybody’s guess. However, of more importance, is whether or not it will be available. My guess is that it will be replaced in the market with Storicide™.

Insecticides are not your only tool for protecting grain. In fact, they may not even be the best tools. Your best management tools remain to store:

- **Clean grain**, free of trash, dock and broken pieces.
- **Dry grain**, near 12% moisture. Insects do not like dry grain.
- **Cool grain**, this is difficult in the summer but even moving the temperature from the 80’s to the 70’s will help. Consider the use of automatic aeration controllers which will automatically switch on fans when the temperature falls to programed levels.

As always, the base line is: store clean, dry grain in clean,
VEGETABLES

PHYTOPHTHORA DISEASES OF VEGETABLE CROPS - A WAKE UP CALL!
by William Nesmith

Diseases of the root, stem, foliage, and fruit caused by Phytophthora capsici and other Phytophthora spp. have become increasingly common in Kentucky during the past few years. Moreover, for the past decade, these diseases have been causing serious losses in several major vegetable production areas of the US. We have diagnosed seriously damaging outbreaks in the following crops in Kentucky: peppers, pumpkins, summer squash, winter squash, tomato, watermelon, eggplants, and tobacco.

The wet weather and field flooding experienced this year is likely to result in a more rapid increase of Phytophthora blights as this pathogen is a water mold. Furthermore, all the rain may cause growers to mistake the problem as just related to wet soils because there is considerable physiological injury due to wet soils (as described last week), plus the centers of Phytophthora outbreaks are often in those same wet sites within the field. Particularly at this stage of the season in Kentucky, Phytophthora capsici is mainly operating as a root rot, which often produces no striking above ground symptoms. Infected plants just appear stunted with poor color, especially those in the low wet areas of the field making it easily ignored as flood damage or “wet feet”, unless you examine the roots. In some crops, the disease progresses to wilting and death of the plant, while in others, it moves into the stem, and in most it causes a fruit rots in closed wet canopies later in the season.

Kentucky’s tobacco-vegetable growers, extension agents, and dealers are probably very familiar with black shank, caused by a close relative of this vegetable pathogen, so use that experience with black shank to help you know where to suspect Phytophthora blights in vegetables. We have noticed in our surveys and farm visits that field sites with a history of black shank are often the first sites to experience Phytophthora blights in vegetables. There are several reasons for this, but the main one is habitat. The wet habitat needed for black shank is the same wet habitat needed for diseases caused by other Phytophthora spp. Thus, just like with black shank, initial disease development within fields often follows drainage patterns. BUT, because P. capsici has highly detachable sporangia and is much more windblown in thunderstorms, P. capsici can rapidly spread across an entire field from the centers of disease that get started in the wet areas.

This vegetable disease resembles many aspects of black shank, but normally does not cause the extensive yellowing seen in burley tobacco with black shank. Some infected plants often have brown to black discolored roots, crowns, and stems. The disease is more easily seen on infected fruit, initially as dark, water-soaked lesions, which may develop a distinctive white layer or crust of spores on the surface of the fruit, as well as stems and leaves. Fruit infection is especially troublesome because the infection may occur days before the symptoms become visible and thus show up in post harvest markets. Produce buyers will likely be very alert to this, which can impact their interest in our produce - at least it should. In fact, the extensive wet weather in many of the leading vegetable growing areas this year has resulted in considerable Phytophthora blight developing in the produce available to the consumer - especially on slicing cucumbers, summer squash and peppers ready for display. Just this past week, I visited several super markets and vegetable stands, and found it on sliced cucumbers, summer squash, and watermelon in nearly every market visited that had out-of-state produce for sale, including finding it on two salad bars - yes on the serving line!

Phytophthora capsici can rapidly spread throughout a field during warm (80°F being ideal for the pathogen), wet conditions. The fungus produces sporangia on the surface of roots, crowns and fruit of infected plants and can be dispersed short range by rain splash, irrigation, and windblown rain. After arriving at the infection site, the sporangia may directly germinate and cause infection, or if in water, stop and produce swimming zoospores (indirect germination) which greatly increases the pathogen’s ability to locate host cells and be spread. One zoospore is all that is needed to infect a plant. This disease, like black shank, is polycyclic, meaning the cycle of infection and spore production can be repeated many times during the same growing season. This polycyclic nature making this a very explosive disease in wet weather. Thus, low levels of infection early in the season may result in an epidemic by harvest, if the disease is not controlled.

Just like with the black shank pathogen, Phytophthora capsici produces a thick-walled, long-surviving resting spore. But, there is a big difference! The black shank pathogen’s resting spore is an asexual spore, while that in the vegetable pathogen is the product of sexual reproduction and is called an oospore. Since oospores are the product of sexual reproduction (creating a unique blend of genes), this vegetable pathogen has considerable ability to quickly adapt to its environment, including development of resistance to the fungicides used to control it. Two mating types (A1 and A2) are required of Phytophthora capsici to make oospores, and both mating types appear to be common in Kentucky as we regularly find oospores. In Michigan, researchers report that both A1 and A2 mating types have occurred in every field sampled and oospores have been found in diseased cucumber and squash fruits. Recent research suggests that oospores survive in soil at least five years while others
Fungicides are rotated. Growers should avoid relying on a single fungicide, to delay development of fungicide resistance with *Phytophthora capsici*. Mefenoxam-containing fungicides are the most helpful in reducing the soilborne aspects of the disease, but be sure to rely on other fungicides in the rotation for the above ground phases of this disease. See ID-36 for the available fungicides by crop.

Development of host resistance is underway in several vegetable crops, so remain alert to the performance of resistant varieties.

**FOURLINED PLANT BUGS SPOT MINT**

By Lee Townsend

Plant bugs and lacebugs use their sucking mouthparts to feed on plant sap. Damage ranges from many small white spots on the leaves to distortion or destruction of plant tissue, depending on the pest and host plant. Some feed on many different types of plants while others feed only on a narrow range or single species.

Adults fly readily and are often gone before symptoms appear. Their injury is often light to moderate and widely distributed. In contrast, the immature or nymphal stages are wingless and can move only by walking. Injury builds slowly but can become very intense as the insects near maturity. In addition to the feeding damage, white cast skins and tarry waste specks may be seen when nymphs have been present for a long time. The adult and nymphal stages of the same species can look very different, which can confuse identification.

Fourlined plant bugs feed on mint, as well as many herbaceous and woody ornamentals including currant, rose, forsythia, sumac, and viburnum. The nymphs are bright red or yellow, adults is yellow to yellowgreen. Both stages have four distinct black lines running the length of the body, hence their name.

This plant bug can be very destructive, especially to herbs and mint. It feeds first on the upper, tender foliage leaving distinct redbrown spots. These spots, the plant's reaction to enzymes injected into the leaf by the insect, can range from white to almost black depending on the host. Feeding by large numbers of plant bugs can produce large brown blotches and/or leaf distortion.

Females cut slits into the host plant and lay six to eight eggs inside. There is one generation a year. It occurs during a six-week period from late May through June.

Control is difficult because the adults fly readily when disturbed. Both the nymphs and wingless adults drop to the ground if the foliage is disturbed. Insecticidal Soap can be used for control but requires direct contact with the insect. A plant covering may be used to exclude these insects from herbs.
SHADE TREES & ORNAMENTALS

WHITE PINE - TIP BURN ON EMERGING NEEDLES
by Julie W. Beale

Over the past two or three weeks, the Plant Disease Diagnostic Laboratories, both in Lexington and Princeton have received a number of white pine samples showing a distinct tip burn on the new needles. Some of these trees also show stunting of the new needles in addition to the tip burn, but others have normal, even vigorous, needle and shoot growth. In affected trees, symptoms are reported to occur all over the tree—not one-sided as we might see with a salt injury. Also affected trees can be adjacent to white pines with no symptoms.

Close examination of the needles reveals an interesting pattern: while the basal portion of the needle is green, there is a band of dark, reddish tissue around the mid-point of the needle and from this band to the tip, the needle is brown (or reddish-brown) and desiccated. Under the dissecting microscope, we see the “band” on the needle is a narrow area of sunken tissue that constricts the needle. Since many needle blight or needle cast diseases will produce a band on the needle at the point of infection, it is helpful to contrast this symptom with those of our common needle diseases. First, most diseases affect trees in a scattered or random pattern, i.e., some needles are affected, and others on the same tree are not. In addition, the two major needle diseases we see in this area, brown spot needle blight and Naemacyclus needle cast, are much more common on Scots and Austrian pines, although they can occur on white pine. These diseases both produce a spot or band on the needle, followed by needle browning and drop. However, the infections of both of these fungal diseases are occurring now (spring and early summer) on current-year needles, and the symptoms will not be visible until late summer or fall; often they are not noticed until the following spring. We do not see the Sphaeropsis tip blight disease—which blights the entire growing shoot—on white pine. Obviously, the symptom patterns of these diseases differ from this recent white pine problem, and of course, infectious diseases are confirmed by finding the microbial pathogen on affected needles, not only looking at the symptoms.

A number of possible causes for the symptoms exist. The most likely scenario is that new needles were injured by late frosts as they were expanding this spring. Temperatures reached the low 30’s on the morning of April 23rd throughout the region, and this may have killed a band of the youngest (basal) needle tissue. Once this band of tissue was damaged, water supply to the tip was cut off, eventually resulting in the death of the needle beyond that point. Needles expand from the base, so healthy needle tissue continued to expand after the injury occurred.

Air pollutants, including ozone and sulfur dioxide, are also reported in some sources to produce this symptom, called “semi-mature tissue needle blight,” but we do not have air pollution data to support this diagnosis, nor has recent weather been conducive to episodes of high ozone. Other environmental factors may also be contributing to the symptoms; we suspect that the stunting of needles in some trees may relate to cool, wet spring conditions in general. Individual trees will differ in their susceptibility to environmental stresses, as well as air pollutants, so it is not that unusual for certain trees to have no symptoms. Affected trees may not be at their most attractive this year, but the overall health of the tree should not be impacted long-term.

Also consider the differences between these symptoms and those of white pine decline that we so often see in Kentucky landscapes. This abiotic disorder starts out with a general yellowing and thinning of the entire canopy of a tree over a period of several years. Tip burn can occur on old and new needles as well as premature drop of needles from the previous season, reduction in annual shoot growth, shriveling of the bark and eventual decline and death. This disorder is related to our soil conditions, which are generally not appropriate for eastern white pine. Dr. Bill Fountain, Extension Horticulturist, reminds us that white pines evolved in areas with deep, well-drained loamy or sandy soils with a low pH (below 6.5). Our higher pH clay soils and compacted landscape sites hardly provide good growing conditions for these trees, hence their tendency to decline after twelve to fifteen years in our area.

LAWN & TURF

BROWN PATCH ACTIVITY IN TURFGRASSES
by Paul Vincelli

Brown patch disease was very active last week in a number of grasses. Given the forecast for hot, humid weather with the possibility of thunderstorms towards the end of the week, brown patch pressure will likely increase on cool-season turfgrasses. Perennial ryegrass is probably the most susceptible host; creeping bentgrass and tall fescue are both relatively susceptible. Surprisingly, we also saw a significant case of brown patch on ‘Midnight’ Kentucky bluegrass in Central Kentucky. I have never before observed significant levels of brown patch on Kentucky bluegrass in Central Kentucky. I have never before observed significant levels of brown patch in this well-adapted cultivar for Kentucky. This just shows how favorable the past 7-10 days have been for brown patch activity.

On all grasses, affected patches are often somewhat circular and can range from several inches to two or more feet in size. On tall fescue and Kentucky bluegrass, leaves exhibit tan, irregular lesions with a thin, brown border. On creeping
bentgrass and perennial ryegrass, a ring of olive-green leaf blades appears on the outside margin of the patch; these blighted leaf blades dry to a tan color. On humid mornings, the mycelium of the fungus often appears as a sparse, very light tan webbing in the lower canopy. This can be best seen with a hand lens. In some cases, mycelium can be quite dense, cottony, and fluffy, and grow all over the leaf blades. In this state, it can look quite a bit like Pythium cottony blight. Since different fungicides are used against Pythium cottony blight and Rhizoctonia brown patch, knowing the identity of the disease can be quite important from a management standpoint. Laboratory diagnosis is one option; another is the use of Alert® Plant Disease Detection Kits from Neogen, which have worked well in my evaluations (<http://www.neogen.com/disease.htm>.

Management

During the next eight weeks or so, be careful with postemergence herbicides, some of which have been shown to increase brown patch activity on cool-season turfgrasses.

Perennial ryegrass and creeping bentgrass. High-maintenance perennial ryegrass and creeping bentgrass swards should have preventive fungicide applications on at this point, and putting greens should continue to receive preventive applications for brown patch control through August (and possibly later, depending on weather). There is a wide selection of fungicides with very good activity for brown patch control. These include products with the following active ingredients: azoxystrobin, chlorothalonil, fluoxastrobin, flutolanil, iprodione, mancozeb, and trifloxystrobin.

Tall fescue. Recent seedings of tall fescue often can suffer severe outbreaks of the disease during summer months. These should be monitored carefully and treated if necessary. Once these swards make it through their first summer and are well-established, they often do not need fungicide treatment to maintain sward density, although fungicides do improve overall greenness during summer. Be aware that products containing chlorothalonil and iprodione are no longer labeled for use on home lawns.

Kentucky bluegrass. Although brown patch was active last week in adapted varieties of Kentucky bluegrass, I believe that this was simply the result of the unusually long string of rainy days since mid-April. Although some foliar damage may be evident now, I don’t expect brown patch to continue developing aggressively enough on this host to justify fungicide treatment.

PREHISTORIC-LOOKING DOBSONFLIES OUT

By Lee Townsend

Dobsonflies are large, prehistoric looking insects. They have soft bodies with clear wings, are usually found near water, and have fluttery flight. The male has long, slender mouthparts that could give a pinch if he is handled but they are not aggressive and do not feed on anything. Females have the same body shape but very small mouthparts.

The adult females lay eggs on overhanging branches or undersides of bridges over streams, or on stones. The eggs hatch at night after 5-6 days and drop into the water. The larvae called “hellgrammites” usually occur under stone in streams where they feed on insects that live in the water. The larvae live for several years in the water and are used as bait by fishermen. The adults only mate, lay eggs and die.

HUMAN

MOSQUITO DISEASES IN PERSPECTIVE

by Mike Potter

Apart from the annoyance, the blood-feeding habits of adult mosquitoes can occasionally result in life-threatening diseases. Malaria and yellow fever used to be common in the United States, but they have been successfully eliminated through widespread public health efforts. Currently, viral encephalitides are the most common mosquito-borne illnesses transmitted to people. “Encephalitis” simply means an inflammation of the brain and can be caused by a variety of pathogens in addition to those transmitted by mosquitoes.

Mosquito-borne strains of viral encephalitis include Eastern Equine, Western Equine, St. Louis, LaCrosse and (most notably), West Nile. Birds and small mammals are important natural hosts for these viruses, which are transmitted to humans and horses through the bite of an infected mosquito. Symptoms of viral encephalitis in humans range from mild to severe and may include high fever, vomiting, drowsiness, and convulsions. Mortality rates vary with the strain of virus involved, e.g., up to a 50 percent risk of mortality with Eastern Equine encephalitis compared to less than a 1 percent mortality rate for West Nile.

West Nile Virus

West Nile virus (WNV) was first isolated in 1937 in the West Nile province of Uganda, and is common in Africa, eastern Europe, western Asia, and the Middle East. The disease first became apparent in the United States in the summer of 1999, when an outbreak occurred in New York City. In subsequent years it quickly spread from coast to coast, infecting birds, horses and humans. By the end of 2002, West Nile virus activity had been documented in 90% of Kentucky counties in either birds, horses, humans or samples of mosquitoes.

Mosquitoes become infected after biting infected wild birds, which are the primary host for the virus. The virus multiplies within the mosquito’s body, and is transmitted to animals while taking a blood meal. Other than birds, WNV is most likely to cause illness in horses and humans. Dogs
and cats appear to have a much lower risk of infection. Unlike such illnesses as influenza, WNV cannot be transmitted from person-to-person by sneezing, coughing, touching or kissing.

Most people infected with WNV experience few if any symptoms. A small percentage develop fever, headache, body aches, swollen lymph glands or skin rash. Less than one percent of infected people experience more severe symptoms, which may include headache, high fever, neck stiffness, disorientation, convulsions, paralysis, and sometimes death. Elderly persons are most at risk of suffering severe symptoms.

In 2002, there were about 4200 confirmed cases of WNV in the U.S. and 277 deaths. Seventy-five cases and five confirmed deaths occurred here in Kentucky. While the virus is clearly a public health concern, about 41,000 people die each year from motor vehicle accidents, 64,000 from pneumonia/influenza, and 430,000 from smoking-related illnesses. Although some people are indeed bitten by disease-carrying mosquitoes, the risk of serious infection is extremely low compared to other risks we encounter each day.

Serious health effects can be further reduced by promptly seeing your physician if symptoms arise, and following the mosquito prevention tips mentioned in earlier (e.g., 5/19, 6/16) newsletters.

**DIAGNOSTIC LAB — HIGHLIGHTS**

**by Julie Beale and Paul Bachi**

Field crop samples from the past week included diagnoses of Lepto leaf spot, Phytophthora root rot and spring black stem on alfalfa; manganese deficiency on soybean; Septoria glume blotch (S. nodorum) and leaf spot (S. tritici) on wheat; and black root rot, black shank, soreshin, Pythium root rot, target spot, alfalfa mosaic virus, tomato spotted wilt virus, poty virus complex, and manganese toxicity on tobacco.

On fruit and vegetable samples, we diagnosed Mycosphaerella leaf spot and Botrytis fruit rot on strawberry; black rot and anthracnose on grape; cedar-apple rust and Phytophthora collar rot on apple; brown rot on peach; black knot on plum; Rhizoctonia stem and root rot on bean; and Septoria leaf spot, Pythium root rot, magnesium deficiency, chemical injuries and wet feet on tomato, and phytophthora fruit rot on pepper, squash, cucumber, and watermelon.

On ornamentals and turf, we saw leaf streak on daylily; Botrytis blossom blight, Cladosporium leaf blotch and low fertility problems on peony; black root rot, Rhizoctonia stem rot, and Botrytis blight on petunia; Pythium root rot on vinca; brown patch on fescue and zoysia; anthracnose on bentgrass; rust and anthracnose on bluegrass; anthracnose (Discilia) and powdery mildew on dogwood; cedar-quince rust on hawthorn; anthracnose and Phyllosticta leaf spot on maple; frost injury and ozone injury on white pine; and transplant shock symptoms on many landscape shrubs and trees.

**INSECT TRAP COUNTS**

**UKREC, Princeton KY**

**June 13 - 20**

- Black Cutworm ..................................... 3
- True Armyworm ................................... 56
- European corn borer ................................. 0
- Southwestern corn borer ............................. 2
- Corn earworm ..................................... 13

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.