TOBACCO

REVIEW OF TOBACCO DISEASE SITUATION

by William Nesmith

As burley and dark tobacco growers plan for producing the 2004 crop, I urge them to consider some disease situations of the past two seasons. Diseases took a significant toll both seasons, but very different diseases were involved. Some growers encountered serious problems in one or both seasons, while neighbors often had no serious disease problems either year. What does that suggest about management? In part, it points out that disease management programs need to be adjusted to match the threat on each farm.

An important principle of plant pathology is this: The earlier in a plant’s life it becomes diseased the greater will be the loss, in general. Thus, controlling transplant diseases is critical. Transplant diseases were much less of a problem in 2003 than the previous season. After the disasters in 2002, many growers greatly improved their tray sanitation program - mainly by starting out with new trays. Cleaner trays greatly delayed disease development, both in the beds and in the field. In addition, the transplant production season was cool, slowing transplant disease development. So the crop was set with healthier transplants, in general, than had been used during the past several years.

Leaf diseases were especially important in 2003 (lead by blue mold) while root diseases (lead by black shank) accounted for major losses in 2002. The repeat of a wet transplanting season in 2003 had again partially set the stage for another round of serious root problems. However, unlike in 2002, the use of better transplants and the fact that wet weather continued all summer, greatly reducing stress, allowed the plant to function without having a good root system. However, that poorly developed root system is part of the reason yields are running lower than expected. Also, this does not mean the root pathogens did not multiply to high levels, just that they did not cause the damage that they did the previous year.

This brings up a very important point in preparing for 2004, that all growers should understand and appreciate when planning. Be sure to separate damage caused by the pathogen from reproduction of the pathogen, as these are very different events. Even though the damage from black shank was much lower in 2003 for most regions, our surveys found very high levels of the black shank pathogen present in many fields by summers end, especially where resistant varieties were grown without adequate rotation. Rotation away from these fields is the key to control.

Last summer’s long wet periods with cooler temperatures favored the development of blue mold, resulting in the worst regional epidemic since 1996. We had more than 100 days with blue mold favorable sporulation and infection periods in some regions. Blue mold developed later than in most recent epidemics, with very little activity associated with plant beds in Kentucky. In fact, the Commonwealth probably would have escaped a major epidemic had infected transplants not been imported from east Tennessee in June, often placed in greenhouses with our remaining plants insuring more contamination. Even though the disease was present prior to importation in transplants, it was having great difficulty becoming established in eastern Kentucky due to the poor quality of the crop at that time. Importing transplants into other regions where greenhouses were present and tobacco was growing much better, resulted...
in the earlier establishment of an epidemic in the heart of burley production than would have occurred without farmers helping the pathogen along. Consequently, blue mold developed in at least 90 Kentucky counties, causing major losses on some farms in half those counties, with several counties reporting a 20% loss due to blue mold.

Some growers successfully used fungicides early on while others waited until the damage was done then wasted fungicide applications, but most made no attempt to control the disease. What are your plans to help your industry not import infested transplants from the south? Our yield data from experimental plots is coming in slowly, but it clearly reflects that blue mold was a major factor in lower yield. For example, in one Breathitt County test, the unsprayed plots yielded about 1900 lbs while those receiving five fungicide sprays of Acrobat MZ are at 2900. In another, the benefits of using tolerant and resistant varieties was clearly demonstrated. NC2000 has the highest resistance currently available, and that variety has yielded better than expected in many of our tests, as long as black root rot and black shank are being controlled by crop rotation. Growers should seriously consider this variety for properly rotated sites located in highly conducive sites for blue mold, especially if they do not intend to use a good spray program.

Virus diseases were also more common in the 2003 crop than in recent times. Alfalfa Mosaic Virus and Tobacco Ring Spot Virus were very active in several regions of the state. The individual plants infected by these viruses are normally stunted significantly, but neither of these viruses normally cause much concern because the incidence of disease within any particular field is normally very low, usually below 0.1%. However, it was not uncommon to find fields with 5 to 15% incidence of these viruses in 2003. A few cases exceeding 50% incidence were observed. The reason for these increases is not understood.

Tobacco Mosaic Virus and Tomato Mosaic Virus were found on several farms in 2004 causing considerable crop damage. These viruses are easily spread from plant to plant through mechanical operations. Tomato Mosaic is even more damaging than Tobacco Mosaic. In all cases examined, the transplants had become diseased from either growing vegetables in the transplant house or through cross contamination with dark tobacco. In one case, the grower had planted about 5 trays of heirloom tomato varieties at one end of the greenhouse, and the viruses were probably on those tomato seed. Clipping transplants greatly enhanced spread of these viruses within the house once the initial infections had occurred.

A new Kentucky virus disease, called Tobacco Vein Banding Mosaic Virus, was diagnosed in 2003. It has been found mainly in eastern and southeastern Kentucky, but as far north as Fleming County. It is another one of the aphid-borne, poty-viruses, but unfortunately, it is not controlled by the VAM-gene, used to control most poty viruses. Control will need to center around reducing sources of this virus in areas surrounding the tobacco field and through early transplanting. In lab tests, this virus also goes to tomatoes, but with little symptoms produced in tomatoes. Late planted crops were hit particularly hard in some sites in 2003, with much of the leaf tissue destroyed during September. This disease was first identified in the USA in east Tennessee in early 90's. Spread appears to have been slow. Did we also move it into Kentucky on transplants? We will provide more details on this virus as more is learned.

Root diseases, too, took their toll in 2003 without being obvious like they were in 2002. I urge growers to carefully reconsider their management decisions surrounding crop rotation with more emphasis given to its value in management of soilborne diseases. Black shank is widely spread about the state with race 1 strongly dominating. Fusarium wilt has increased sharply because most of the newer varieties in use today have no resistance to this disease. Root knot nematodes are becoming more common, too, especially on farms rotating tobacco and vegetables. As disease management tools, crop rotation should be viewed as the center of the program with resistant varieties and chemicals as helpful partners and supplements, rather than, as substitutes for rotation. Dark tobacco growers have historically had much lower losses from root diseases, because they do not have available the level of root disease resistance found in burley. Consequently, they are still operating under the above principle that rotation - not variety - is the center of their disease control plan. But even in the Dark Patch, growers are trying to consolidate and reduce rotation - with the result being sharp increases in black shank. As variety improvements are made concerning disease resistance, do not forget that the importance of rotation in disease control. If new varieties result in sharp reductions in crop rotation, expect to see increased root and stem collar disease problems.

corn

Field Corn IPM and Farming Larger Acreage
by Ric Bessin

The trend to farm larger acreage has been on the rise with many cash grain farmers. Increasing acreage is one method to increase farm revenue. However, increasing acreage also increases the amount of time and effort needed to monitor and manage pests. Some growers are looking for pest management practices that reduce risk and management inputs to enable them to farm more acres. Many growers have shifted management strategies from pest monitoring and treating when needed to preventive controls and reduced monitoring. Preventive controls include Bt corn for corn borer, cutworm, and rootworm control and seed treatments controlling seedling and soil pests. These practices have reduced the need for monitoring of insect pests in corn. So does farming of larger acreage threaten long-established IPM programs?
One important factor to consider is the chance of economic loss from a pest or a complex of pests. IPM programs in Kentucky have shown that the chance of economic loss from any single pest is relatively small, an exception being corn borers attacking late planted corn. However, some growers have reported substantial yield benefits when preventive controls are used against a complex of secondary pests. These secondary pests include wireworms, white grubs, seedcorn maggot, and cutworms, each of which may be below an individual economic threshold.

The seed treatments also offer an alternative to soil applied insecticides. These seed treatments use much less insecticide and some are reduced risk pesticides. But keep in mind that soil-applied insecticides have only been used on a fraction of corn acres. Those growers that are interested in seed treatments and have needed to control corn rootworms may want to consider one of the higher rate (and cost) seed treatments. While those needing control of secondary pests and get by with one of the lower rate and cheaper seed treatments.

An equally important factor is the cost of the preventive pest control tactics. Seed treatments and Bt traits can greatly increase the price for seed. Preventive insecticide applications, seed treatments and Bt corn are not cheap and they must provide returns to the growers exceeding their costs. This winter, many growers are struggling with the decision of whether to invest in these preventive controls or to continue with the strategies they have used in the past. I continue to recommend to growers interested in these new tools to include untreated strips in their field. This allows for on farm evaluation of the costs and benefits of these tools. Growers with yield monitors can measure these benefits accurately.

On a per acre basis, IPM in field corn has historically been shown to reduce insecticide applications and manage input costs effectively. But IPM often requires more management time per acre. With the shift toward new technologies and preventive controls, several questions come to mind. Will preventive controls become a foundation for IPM in field corn? In problem fields where there has been a history of soil insect problems, the need for preventive treatments may be clear. But growers will need to determine what the benefits will be to other parts of the farm.

FORAGE CROPS

MORE EVIDENCE OF INCREASED AGGRESSIVENESS OF POWDERY MILDEW ON RED CLOVER
by Paul Vincelli

Last April, Dr. Norm Taylor, UK Clover Breeder, and I reported on evidence that the red clover fungus, *Erysiphe polygoni*, appears to have become more aggressive in recent years. Powdery mildew is the most serious disease of red clover in the U.S., giving leaves a whitish, powdery appearance. As the disease continues to develop, leaflets turn yellow and then brown, and they finally die. The disease has not been shown to reduce yield but can reduce forage quality.

Our evidence that *Erysiphe polygoni* has become more aggressive was based on tests conducted by Dr. Taylor at the University of Kentucky. These tests showed surprisingly high levels of disease on varieties known for very good to excellent resistance to powdery mildew, such as Kenland and Marathon (a Wisconsin variety). Similar tests were recently completed at the University of Wisconsin, the only other university with a red clover breeding program. The results of that test, shared with me by Dr. Taylor, confirm the results of the UK test: that there appears to be increased aggressiveness of *Erysiphe polygoni* across the Midwest.

The most important management option available for this disease is to select resistant varieties. Given the current high level of aggressiveness of the fungus, all varieties can be expected to develop some powdery mildew, but it would be wise to select varieties with partial resistance such as ‘Freedom!’ than a fully susceptible variety, such as a common red clover. Breeding is underway to increase the resistance of ‘Freedom!’ Timely cutting may also help slightly to reduce quality losses by capturing forage before the disease has fully developed.

WHEAT

MID-WINTER APHIDS IN WHEAT – WHAT TO DO?
by Doug Johnson

I have to be the only person around that complains about warm weather in mid-winter. But if you take some time on those warmer days to check your wheat fields you might complain too! It appears that at least some locations aphids have made an appearance during the warm days around and following Christmas. So what is to be done?

Let’s remember this:

%If you have aphids in mid winter, then you had them in the fall.

%Movement of BYD virus in the fall is much more important than in the winter.

%If catastrophic damage is to appear in the spring, it has already been done.

Generally Speaking:

%Aphids do little movement, feeding or reproduction when temperature is below 48-50°F.

%Wheat plants grow very little with temperatures below 48-50°F.

%Therefore virus replication will be very limited with temperatures below 48-50°F.

However:

%BYD virus can be moved by large aphids in time to cause a yield reduction in a warm winter or an early spring.
Aphids can affect wheat crops and their control is crucial. The most important time for controlling aphids is during the first thirty days following emergence. Beyond this, evaluating the aphid-BYDV-wheat situation in your fields is necessary. Systemic insecticides like Di-Syston may be the best ticket, especially if the populations are large and have winged individuals. If you are going to treat, look for a window when warm temperatures are present. If aphids are present and active, this could be your best time to spray. However, if infection has already occurred, spraying now will not change anything. If populations are large, you might gain an advantage by treating. It is unusual but it does happen. If you decide to do this, then you need to recognize that infection may have already occurred and your spray will not stop those infections.

If you are planning to spray today because it is 55-60°F and the forecast is for temperatures of 31°F and below tonight, then you might want to wait. If infection has already occurred, spraying now will not change anything. If the aphids are obviously up and active an over the top application will be adequate. If you have seen large numbers of aphids earlier, but they are below the soil line and on the roots, using an application of a systemic insecticide like Di-Syston may be the best ticket.

Horn flies and face flies are key pests of beef cattle in Kentucky. Both species breed in fresh pasture manure piles but present very different threats and management problems. Fortunately, beef producers can select from a variety of fly control options. Considering the most serious pest(s) of the herd and your cattle management practices can help you to sort through the choices. This is the first in a series of articles to review pasture fly control.

**LIVESTOCK**

**PASTURE FLY CONTROL OPTIONS**

by Lee Townsend

Horn flies are blood feeders. They remain on animals most of the time, taking 20 to 30 small blood meals per day. More than 100 flies along the sides and backs of each animal every day during the fly season can mean 12 to 15 pounds lower weaning weights for spring calves and poor gains for older animals. The close association between the horn fly and the animal, however, does make many control methods quite effective. On the other hand, face flies spend about 90% of their time resting off of animals and visit them only to feed on liquids around the eyes and face. This makes some fly control methods more effective than others because face flies visit hard-to-treat areas for very short time periods.

**INSECTICIDAL EAR TAGS**

Insecticide-impregnated cattle ear tags release small amounts of an insecticide which are distributed over the animal during grooming or rubbing. In general, ear tags provide excellent, long term control of horn flies and a some brands reduce face fly numbers.

Read the label before you purchase and use insecticide ear tags. All tags are labeled for beef cattle while only those with certain active ingredients are approved for use on lactating dairy cattle. Check for any limitations for use, such as animal age. Look for the common name of the active ingredient (for example, permethrin). In some cases, different brands of tags contain the same active ingredient. You may save money by comparison shopping, or avoid inadvertently using the same active ingredient if resistance is a potential problem.

Consider the recommended number of tags per head. Some brands are used at the rate of one per animal. UK research trials have generally shown that systems which use two tags per animal seem to provide better face fly control than those which rely on a single tag. Animals only need to be handled one time to apply the tags. However, this is not necessarily when you would normally work your animals. For fly control, it is best to tag animals after horn fly numbers reach 50 or more per side. This reduces the chances of developing resistance to the active ingredients that are being used. Normally, tags provide 12 to 15 weeks of fly control. Tagging too early in the season can mean that the tags are not providing good control in the fall that will help to control the overwintering population.

Insecticidal ear tags move with the animals. This is an advantage if animals are moved at intervals and fixed control systems (dust bags or back rubbers) are not in place in every pasture or grazing area.

There are three main tag types based on their active ingredient(s).
1. **Organophosphate (OP) insecticides** such as diazinon, fenithion, pirimifos methyl, or a diazinon + chlorpyrifos combination. These tags provide good horn fly control and moderate face fly control.
2. **Synthetic pyrethroid (SP) insecticides** fenvaerate and permethrin are the original members of this group. These tags are sold under a variety of brand names. Usually, they are less expensive than those containing the newer pyrethroids, such as cyfluthrin, lambda-cyhalothrin, and zeta-cypermethrin. These tags provide good horn fly control and better face fly control than the OP tags. The...
two groups of tags contain insecticides that attack the nervous system of the fly in different ways.

Seasonal rotation between an OP and an SP insecticide can be useful in combating insecticide resistance that has developed in horn flies in some areas of the state. Resistance, indicated by a failure in horn fly control, can develop when tags containing the synthetic pyrethroid permethrin have been used for several consecutive seasons.

3. Combination tags couple an OP and a SP in the same tag. Current examples pair lambda-cyhalothrin and pirimiphos methyl or cypermethrin and chlorpyrifos. The assumption is that the OP would control SP-resistant horn flies.

Are there any safety precautions associated with using insecticide ear tags?

Non-permeable gloves should be worn when tagging animals. This is clearly shown in the application pictures on the containers of some tag brands. The hands shown applying the tags clearly have gloves. Comparable pictures with other brands do not obviously show gloves, although label statements indicate that they should be worn.

Insecticidal ear tags should not be handled bare-handed. The concentration of insecticide in the tags varies from 8% to 36%. The tags are manufactured so that the insecticide is rubbed off the surface and onto the animal. Any handling of the tags leaves some insecticide on the hands. The insecticide then can be transferred easily to the mouth, eyes, face or other areas of the body. Some individuals may be very sensitive to the active ingredients in the tags.

POUR-ON INSECTICIDES

Pour-on products are ready-to-use formulations that are applied to animals in measured doses based upon body weight. Pour-on products that contain synthetic pyrethroids (cyfluthrin, permethrin, or lambda cyhalothrin) kill by contact. Horn flies are killed as they land on treated areas of the animal and pick up the insecticide through their body. In addition, pour-on products such as Cydectin, Dectomax, Eprinex, and Ivomec are systemic pesticides that are used to kill a wide variety of internal parasites. They will provide some fly control, as well.

Typically, the contact and systemic pour-ons provide about 4 weeks of fly reduction so they must be re-applied at intervals or used in combination with other methods. The length of control will vary with weather and other factors so treat again when fly numbers build back up to about 100 per side but no sooner than the label instructions allow. While pour-ons can provide very good horn fly control, it is unlikely that they will do more than a fair job against face flies.

Permethrin is a common active ingredient in many pour-ons. There is a wide range of concentrations, and consequently, application rates. The concentration of active ingredient in the formulation determines the amount applied per animal so the same amount if insecticide is applied but volumes may differ. Be sure to check for the correct dose rate. Some formulations (De.Lice, Expar, and Permethrin) are sold in synergized formulations. These contain piperonyl butoxide, a material that enhances activity. Other products may contain UV blocks, similar to sun screens, to slow the break down of the insecticide by sunlight.

If performance of permethrin is reduced due to insecticide resistance, it would be better to switch to an organophosphate insecticide. Products containing permethrin may be used on beef, as well as, dry and lactating dairy cattle. Cylence (cyfluthrin) and Saber (lambda cyhalothrin) contain the newer synthetic pyrethroid insecticides. Cyfluthrin is used in the Cutter Gold Ear Tags, while Saber Extra Ear Tags are made with (l-cyhalothrin). Synthetic pyrethroid insecticides are very toxic to fish. Do not allow treated animals to wade in ponds or creeks. They can contaminate the water and kill some aquatic organisms.

INSECTICIDE SAFETY

Signal words on the label range from CAUTION to WARNING. Several products carry statements about the potential for allergic reaction following exposure. Many are easily absorbed through the skin or eyes, some have irritation vapors. Wear protective gloves and wash hands thoroughly with soap and water after tagging or when taking a break.

FOREST & WOODLOT

RETURN OF THE COMMON OAK MOTH CATERPILLAR?

by Lee Townsend

Outbreaks of the common oak moth caterpillar have popped up over our region during the past 2 to 3 years beginning in 2001 and continuing into 2003. Favorable conditions over a relatively wide area have lead to moderate to severe oak defoliation in scattered locations in Missouri, Ohio, Kentucky, and West Virginia. The outbreak While the common oak moth appeared to be the predominant species, several looper species also were present and contributed to defoliation at some sites.

The common oak moth caterpillar has a brown body with tan to black blotches on its sides. The back is checkered with diamond-shaped markings and slanted lines. Full grown larvae are just over 1 inch long when they stop feeding and pupate. There is only one generation each year with the caterpillars active from May to June. Early feeding by small caterpillars often is not noticed but as leaf consumption increases dramatically as they grow and defoliation can appear to have occurred “overnight.”

Common oak caterpillars seem to be able to feed on many kinds of oaks but white oaks have been hit hardest in this round of infestations. In many cases, trees can be severely or completely defoliated. A second leaf flush can
compensate for early season feeding damage if trees were healthy before the insect attack. However, previous or subsequent stresses can increase the impact of this damage. Across the region lingering drought effects, root diseases, and attack by borers has contributed to the oak mortality associated with outbreaks.

What is in store for 2004? Usually, very high insect populations cannot be sustained for more than a few seasons. Unfavorable weather conditions or natural enemies often bring outbreaks to an abrupt end. This was the case in the Missouri Ozarks where heavy insect pressure in 2001 was followed by very low levels of caterpillar activity in 2002. That question will be answered for us in the next few weeks.

SHADE TREES & ORNAMENTALS

SURVEY FOR Phytophthora ramorum (SUDDEN OAK DEATH) IN KENTUCKY, 2003
by John Hartman

During recent years, a new disease of oaks and other woody plants has appeared in the coastal regions of northern California and Oregon. The disease, sudden oak death (SOD) is caused by Phytophthora ramorum, a fungus new to the U.S. The fungus causes a bleeding necrosis on the trunks and limbs of affected oak and tanoak trees and can girdle and kill infected plant parts. The fungus also infects foliage, causing spots, blotches, or leaf tip necrosis of many kinds of plants without much notice or harm to the plants. Infected “carriers” of SOD may include bay laurels, rhododendrons, maples, viburnums, honeysuckles, buckeyes and other trees and shrubs.

In Kentucky, there is concern that this disease would similarly devastate oaks if the pathogen were introduced into the state. The SOD disease fungus thrives in the relatively cool and moist climate of coastal California and Oregon. Since we also can have periods of cool, moist weather in spring and in fall, one might expect the disease to sometimes thrive here, too. The wide host range of the fungus includes Kentucky woody plants such as red oaks, rhododendrons, mountain laurels, and viburnums.

Thus, effective February 14, 2002, a federal quarantine was imposed to prevent movement of infected plants or the pathogen from the west coast to Kentucky and other states. However, the disease was known to be present in California for several years before the quarantine was imposed. During that time, it is possible that plants from California with P. ramorum were unknowingly shipped into Kentucky, possibly even through third party commercial arrangements. Although such infected plants most likely have been sold and moved by now, the fungus could have escaped into vegetation surrounding the nursery or to younger plants in blocks that did not originate on the west coast.

How the Kentucky survey was conducted. The 2003 survey was done during April, May, June, September and October when cooler weather would favor this disease. Selected nurseries were examined for plants of all species showing abnormal symptoms including bleeding necrosis, leaf spots, blotches and leaf tip necrosis. Nursery blocks with oaks, rhododendrons, viburnums and mountain laurels were especially scrutinized. In the woody vegetation in forests and fencerows surrounding the nurseries plants with suspicious symptoms were also examined. The survey was further bolstered by collections of wild plants with suspicious symptoms from Natural Bridge State Park and the Pine Mountain Settlement School.

Collections of nursery and wild plant specimens were placed in plastic bags, and immediately taken to the laboratory for analysis. Small pieces of infected plant material were plated on a culture medium selective for Phytophthora (PARP) and were floated on water in Petrie dishes. Samples were analyzed for presence of the fungus Phytophthora. When Phytophthora was found subcultures were grown on V-8 juice agar and the cultures were analyzed using a polymerase chain reaction (PCR) protocol specific for P. Ramorum.

Survey Results. In 2003, collections were made from eight nurseries and two natural areas in ten counties. Counties represented in the survey include Bourbon, Calloway, Fayette, Hardin, Harlan, Harrison, Laurel, Oldham, Powell, and Washington. A total of 110 plant samples were collected for processing; 42 were from nursery blocks and 68 were from nursery fencerows and adjacent forest edges, or natural park stands.

Sampled plants included the following: From nursery blocks: white ash, river birch, bald cypress, American elm, ginkgo, hawthorn, hornbeam, dwarf English laurel, lilac, tree lilac, southern magnolia, sweetbay magnolia, red maple, sugar maple, English oak, pin oak, red oak, white oak, rhododendron, sweetgum, and viburnum. From nursery fencerows, adjacent forest edges, and natural park stands: green ash, white ash, American beech, blackberry, blueberry, cat brier, American chestnut, flowering dogwood, gray dogwood, rough-leaf dogwood, box elder, American elm, slippery elm, hackberry, American holly, honeysuckle, bittersnack hickory, shellbark hickory, poison ivy, mountain laurel, black locust, red maple, sugar maple, mulberry, chestnut oak, chinquapin oak, red oak, white oak, persimmon, rhododendron, multiflora rose, sassafras, sumac, sycamore, tulip poplar, and Virginia creeper.

The plant specimens that were collected mostly had symptoms of spots, blotches and leaf tip necrosis, but one white oak had symptoms of a bleeding canker and a viburnum had a canker and shoot dieback. Although many plants had symptoms similar to those expected for plants infected with P. ramorum, Phytophthora was isolated from only one group of ‘Eskimo’ viburnums. This unknown Phytophthora was examined microscopically for presence of sporangia, zoospores, oospores and clampyospores. This isolate appeared to
differ morphologically from *P. ramorum*, and yielded negative results with PCR.

This survey suggests that if *P. ramorum* is present in Kentucky, infections are below detectable levels for this method of surveying nurseries and native plant areas. Nevertheless, it will be important for nursery growers to continue surveillance activity in and near their nurseries on the off-chance that this fungus has somehow found its way into Kentucky. The survey will continue in 2004. The survey team, led by John Hartman, included: Joe Collins, Carl Harper, Amy Fulcher, Claudia Cotton, Paul Vincelli, Bernadette Amsden, William Nesmith and Jen Flowers.

NEW QUARANTINE REGULATIONS FOR *Phytophthora ramorum*, CAUSE OF SUDDEN OAK DEATH 
by John Hartman

The following Official Pest Report from the National Plant Protection Organization was forwarded from the Southern Plant Diagnostic Network this week: *Phytophthora ramorum* (sudden oak death, ramorum blight, ramorum die-back); Expansion of Listed Regulated Articles--California and Oregon - January 09, 2004. On February 14, 2002, the APHIS published an interim rule (7 CFR 301.92) in the Federal Register for *Phytophthora ramorum*. This rule regulates the artificial spread of this disease-causing organism from moving out of the counties where the disease is established. We have now learned that certain plant parts of certain additional hosts require regulating in order to control the artificial spread of this disease.

Researchers in Oregon and the United Kingdom have identified six new host species of *Phytophthora ramorum*. Five of the new species were found in a nursery setting in Oregon. The other new species (witch-hazel) was found in an established planting in a large public garden in the United Kingdom. These new hosts are: *Camellia sasanqua* (sasanqua camellia), member of the Theaceae; *Pieris formosa × japonica* (Pieris ‘Forest Flame’), member of the Ericaceae; *Pieris floribunda × japonica* (Pieris ‘Brouwer’s Beauty’), member of the Ericaceae; *Pieris japonica* (Japanese Pieris) a member of the Ericaceae; *Viburnum plicatum var. tomentosum* (Doublefile viburnum), member of the Caprifoliaceae; and *Hamamelis virginiana* (witch-hazel), member of the Hamamelidaceae.

Therefore, effective immediately, the following are restricted articles under 7 CFR 301.92: *Camellia sasanqua* (nursery stock and leaves); *Pieris formosa × japonica* (nursery stock, twigs, and leaves); *Pieris floribunda × japonica* (nursery stock, twigs and leaves); *Pieris japonica* (nursery stock, twigs, and leaves); *Viburnum plicatum var. tomentosum* (nursery stock and all plant parts except seeds); and *Hamamelis virginiana* (nursery stock, twigs, and leaves).

This action is authorized under the Plant Protection Act of June 20, 2002, Section 412(a), which authorizes the Secretary of Agriculture to prohibit or restrict the movement in interstate commerce of any plant, plant part, or article, if the Secretary determines the prohibition or restriction is necessary to prevent the dissemination of a plant pest within the United States.

This action is also authorized by 7 CFR 301.92-2(b)(2) which designates as restricted articles any other product or article that an inspector determines to present a risk of spreading *Phytophthora ramorum*. This designation requires the inspector to notify the person in possession of the product or article that it is a restricted article.

In accordance with the provisions of the Administrative Procedures Act, this action will be published as a regulatory update in the Federal Register for public comment.

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.