KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY •AGRONOMY

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ANNOUNCEMENT

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SMALL GRAINS

APHIDS IN SMALL GRAINS
By Doug Johnson

A number of people have remarked to me about the lack of aphids in this fall's wheat crop. This seems at first glance to be somewhat of a surprise, given the long warm fall that we have had. I would guess that the cause is the hot and very dry August and September preceding this crop and the resulting delay in planting date in many areas. We commonly talk about the aphid's ability to over-winter, carrying BYDV into spring, but remember they must also 'over-summer'. This may be a very critical event for predicting aphids and BYDV presence in Kentucky wheat. Remember, no matter how 'nice' the fall or 'mild' the winter, if there are no aphids (and BYDV) present it doesn't make any difference how good the weather is for aphid growth and disease progress.

I just received a message from a colleague in Alabama (they operate a suction trap for aphids) stating that they have caught fewer aphids this year than in previous years. This just lends a little more weight to the concept.

Still, if we get very mild days late in the winter, you should check to see if aphids are present. The number required to cause a problem is very low, and aphids can reproduce very rapidly. As long as the temperature remains low, reproduction and movement will remain small but if temperatures climb populations can also increase. My guess is

that we will be in pretty good shape but we need to continue to keep a look out.

TOBACCO

REVIEW OF THE TOBACCO DISEASE DEVELOPMENTS FROM THE 1998 SEASON (PART 2 OF 2).

By William Nesmith

This is the second part, of a two part article, the first part was published in issue number 833 of Kentucky Pest News (November 23, 1998).

BLUE MOLD EPIDEMIC OF 1998: Kentucky's tobacco industry faced another close call with blue mold in 1998, but escape major losses from it, overall. The blue mold threat presented in 1998 was much more serious than most people realized.

Until mid June, the stage had been set well to favor blue mold. It again had been introduced and distributed widely with southern transplants. But, unlike most other recent epidemics, it was introduced into southwestern Kentucky and northwestern Tennessee, which positioned it directly into the prevailing wind paths that would spread it to nearly all of Kentucky. By mid June, blue mold was strategically positioned in Kentucky and with the explosive momentum to cause the kinds of losses experienced in 1995 and 1996 if disease favorable weather continued another 10-14 days. Fortunately, the weather suddenly changed to sunny and very hot for several days starting around June 20, stopping the epidemic. Although some communities continued to experience blue mold after this event, the `knock-out punch' was done.

Grower's efforts to control the diseases made an important contribution to reducing losses, especially in transplant production, but it is important to remember that the overall impact of their efforts in preventing an epidemic was minor when compared to the influence of weather. As a whole, growers were just moving too slowly and with too little attention to the details of foliar fungicide application to have avoided major losses from blue mold without a "weather-saving-event". Unless this is appreciated, the industry remains vulnerable, because it is likely to over-estimate the value of certain control approaches.

It is human nature to give credit to what ever was being done just before the disease stopped. Consequently, the number of "snake oil" treatments surfacing and the range of "short-cut" to otherwise effective protocols has increased markedly. As decisions are made for 1999, I urge growers to ask for the data supporting the recommendations. When you have those data, check very carefully the level of disease pressure involved with the test. Remember, the "school yard bully" looks strong until put to the real test!

Why did the mid-June, hot weather event have so much impact on limiting losses from blue mold? Because, those conditions were very destructive to the blue mold fungus at every stage in its life cycle (causing inoculum potential to plummet). In addition, this unfavorable weather for the disease occurred during the stage in crop development, when the plants are vulnerable to systemic development of blue mold in the field - the most destructive phase of the disease. After this brief very hot period, even in communities that returned to ideal weather for blue mold, it took three to four cycles of the pathogen (20-30 days later) before the fungus population returned to the damaging levels present prior to that "blue mold-stopping-event". However, by then, most of the crop was beyond the stage where systemic development of the infection could occur.

Most areas receiving major damage from blue mold in 1998, were either in western counties where serious plant damage had been sustained prior to the hot weather event, or were located in sites that did not reach such high temperatures, such as the northern counties or in shady sites. Coincidentally, this same hot weather event resulted in a sharp increase in losses from black shank, but this negative event was greatly outweighed by the benefits achieved in blue mold control.

LATE SEASON DROUGHT AND INFECTIOUS DISEASES: The late summer drought was another weather event that played a significant role in how diseases developed in 1998. Drought increased the losses from black shank and other root diseases, because the plants with diseased root systems were less tolerant of drought. In addition, as the infected plants became more stressed from the drought, they became less able to tolerate the infections that had occurred earlier and were more likely to be killed by the stem diseases (black shank and soreshin). In many cases, the plants were infected with the soreshin pathogen (*Rhizoctonia)* when set to the field.

Drought also reduced losses from blue mold by slowing foliar disease development during late July and early August, and stopping late summer outbreaks since leaves remained dry at night. But, even with the drought, yield losses from plants with systemic blue mold continued and would have been high had the mid-June weather events not developed as they did.

It is useful to compare 1998 with 1995, when we experienced high losses from blue mold. During that season, a more intense drought developed than in 1998, starting July 5. But, losses attributed to blue mold were high due to systemic blue mold sustained during the cool wet period from mid June to early July, resulting in lower leaf weight, higher stem diseases, and lodging. For example, in central Kentucky experimental plots, the yields of systemically-infected plants were reduced by 1300 lbs / A as compared to plants without systemic infections (having only the foliar phase of blue mold) while sustaining the same drought. In addition, the systemic infected plants developed lodging problems and were killed at much higher rates by black shank and soreshin.

Thus, as we prepare to make decisions for next year let's appreciate what really happened during the 1998 season, least we act on ignorance!

DIAGNOSTIC LAB - HIGHLIGHTS

By Julie Beale and Paul Bachi

We have seen several problems on greenhouse tomatoes lately, including early blight and a complex of viruses (tomato mosaic virus and potato virus X). We have also seen severe powdery mildew on tuberous begonia grown in the greenhouse, as well as powdery mildew on houseplants and greenhouse and outdoor roses. Cytospora canker and Sphaeropsis tip blight were diagnosed on pines.

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KENTUCKY PEST NEWS

PLANT PATHOLOGY

This issue concludes the 1998 series of Kentucky Pest News (KPN) and marks the end of the 22nd year of inclusion of disease information in KPN. The major objective has been to provide timely information on anticipated and occurring diseases in Kentucky. Any comments (favorable or critical) readers may have regarding KPN (i.e., format, subject matter, coverage, timeliness, etc.) may be directed to KPN authors: John Hartman, William Nesmith, Don Hershman, and Paul Vincelli, Extension Plant Pathologists; Paul Bachi and Julie Beale, Plant Diagnosticians. The above authors appreciate the efforts of colleagues who have co-authored topics in KPN; and Pat Yancey for typing, proofreading, and transmitting KPN.

The final issue of KPN 1998, like final issues of previous years, contains an index of all plant disease topics covered during the current year. The index is alphabetized according to each crop or other subject matter. After each crop, each disease that was discussed the past year is listed with the appropriate PNA issue number(s). KPN issue numbers in parenthesis () refers to a listing of the crop or disease in the "Diagnostic Lab Highlights" section. We wish each of our readers a Cheerful Holiday and Peace and Prosperity in 1999.

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ENTOMOLOGY

GARDEN AND FIELD CROP PESTS

HOUSEHOLD PESTS

HUMAN PUBLIC HEALTH PESTS

LANDSCAPE, TURF, FRUIT

LIVESTOCK

VEGETABLES

Lee Townsend, Extension Entomologist

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