

# KENTUCKY PEST NEWS

ENTOMOLOGY • PLANT PATHOLOGY • WEED SCIENCE

One line at: [www.uky.edu/Agriculture/kpn/kpnhome.htm](http://www.uky.edu/Agriculture/kpn/kpnhome.htm)

---

**Number 1011**

**February 23, 2004**

---

**ANNOUNCEMENT**

- 2004 IPM Training School  
CORN
- Black cutworm control in corn  
WHEAT
- Folicur section 18 application submitted

**LAWN & TURF**

- Performance of generic phosphite fungicides: a status report

**SHADE TREES & ORNAMENTALS**

- Manage rose black spot with disease-tolerant cultivars
- 

**ANNOUNCEMENT**

**2004 IPM Training School,  
Wednesday March 17**

The 2004 IPM Training School is scheduled for Wednesday, March 17. The meeting will be held at the UK Research Center in Princeton. Registration will open at 8:30 AM with the meeting starting at 9:00AM and ending at 4:00 PM.

Pest identification will be a major part of the training school. Weed, insect and disease problems of corn, soybeans, and small grains will be covered. A review of corn diseases will include the discussion of Mycotoxins. An update of pest problems in Kentucky will include the following topics: Soybean Stem Borer, Soybean Aphid, Soybean Rust, and New Technology for Corn Insect Management

Advance registration is not needed and the meeting is open to the public free of charge.

Program has been approved for 5.5 hours of CEU's for Certified Crop Advisers. (3.0 Pest Management, 2.0 Crop Management and .5 Soil and Water Management)

Program has also been approved for 3 general hours and 1 specific hour for Categories 1 ag applicator, 10 demo and research, and 12 retail pesticide sales agent (dealer) for Kentucky Pesticide Applicator Training.

For additional information contact Patty Lucas at 270 - 365-7541 extension 218 or [plucas@uky.edu](mailto:plucas@uky.edu)

**CORN**

**BLACK CUTWORM CONTROL IN CORN  
by Ric Bessin**

Cutworms remain one of the key insect problems that concern corn producers in Kentucky. There are a number of new tactics that are commercially available for cutworm control and growers are trying to decide what will give them the level of protection they need at the most competitive price. Some of these newer products are preventive in use, that is, the decision to

use them is made long before. For many corn producers this is a change in strategy from reactionary (scouting and treating only if necessary) to preventive. Typically, most corn fields do not have economically-treatable infestations of cutworms. Records from IPM scouting programs in the late 1980's indicated that only about 15% of fields were close to the economic threshold.

In the spring of 2003, a trial the UK Spindletop Research Farm evaluated several soil-applied insecticide, insecticide seed treatments, and two types of Bt corn for control of black cutworm larvae. Individual plots consisted of 2 rows of corn, 6 m long, with 96.5 cm row spacing. Ten-inch aluminum barriers were buried 4 to 5 inches into the soil around a 2m<sup>2</sup> section in the middle of each plot enclosing a portion of both rows of corn. On 16 and 23 May, 24-fourth instar black cutworms were released inside each of the barriers. The numbers of cut plants were recorded 24 days after plant emergence. A plant was considered cut if at any time it was cut off by cutworms, regrowth was disregarded.

Generally, all of the treatments, with the exception of YieldGard Corn Borer, provided significant control of cutworms. The seed treatments provided levels of control similar to the soil applied insecticides. Keep in mind that some of the treatments (some seed treatments and YieldGard corn borer), do not claim to control cutworms, so growers should use these only at their own risk. Also note that while the untreated controls sustained 11 to 12 percent cutting, only a fraction of those plants died. This is common with cutworm studies, when the cutting occurs above the growing point, the plant will recover.

2003 Cutworm Trial - University of Kentucky, UK Spindletop Farm

Treatment	Rate	Application/ timing	Percent cut plants	Killed plants
Force 3G	4 oz/1000' (T-band)	at planting	3.23 cde	0.78 c
Warrior T	1.92 fl oz/a (Broadcast)	after plant emergence	4.06 b-e	0.00 c
Mustang Max	0.018 lb ai/ A (Broadcast)	just before release	1.67 cde	0.00 c
Mustang Max	0.011 lb ai/ A (Broadcast)	after plant emergence	2.42 cde	0.00 c
Poncho	0.25 KE	seed treatemnt	1.59 cde	0.00 c
Gaucho	0.165 KE	seed treatment	3.96 b-e	0.78 bc
Prescribe	1.35 KE	seed treatment	2.47 cde	0.00 c
Cruiser	0.133 KE	seed treatment	0.78 e	0.00 c
Aztec 4.67 G	3.0 oz/1000'	at planting	5.63 b-e	0.78 bc
Baythroid 2 EC	1.6 fl oz/ A	after plant emergence	3.62 cde	0.00 c
YieldGard Corn Borer	-	-	12.50 a	3.91 a
Untreated	-	-	12.76 a	2.40 ab
Herculex	-	-	2.10 cde	0.00 c
Untreated (Herculex Isoline)	-	-	11.01 ab	1.56 abc

Means in the same column followed by the same letter are not significantly different ( $P>0.05$ ; LSD).

## WHEAT

### FOLICUR SECTION 18 APPLICATION SUBMITTED by Don Hershman

On January 27, 2004, The Kentucky Department of Agriculture submitted a Section 18 application to the Environmental Protection Agency (EPA), seeking approval for use of the fungicide Folicur for Fusarium head blight (FHB) suppression in Kentucky. There is a 50-day review period, and assuming a favorable response, we should have plenty of time to get product into the system and an educational program in place before the critical FHB period hits, around the beginning of May.

I also have plans to hook Kentucky into a national Fusarium head blight forecasting system and model being developed primarily by scientists in Ohio and Pennsylvania, but in cooperation with others. The plan at this time is to make a website available to all Kentucky wheat producers which would allow input of farm-specific temperature and moisture data, and provide a risk rating for FHB. This will only be of academic interest if EPA does not grant a section 18 for Folicur. However, if Folicur use is given a green light, wheat

producers will be able to use the forecasting system to help them decide if a Folicur spray might be needed. I need to add here, that this forecasting is based on a model that is still under development and is only about 80% accurate. In addition, it is focused exclusively on FHB symptom expression and not deoxynivalenol (DON) accumulation in grain. Based on our experience last year where DON accumulation in grain far exceeded FHB symptom expression in fields, this could limit the usefulness of the current FHB forecasting system under conditions like we experienced last spring.

I will keep you abreast of all future FHB developments as they occur.

## LAWN & TURF

### PERFORMANCE OF GENERIC PHOSPHITE FUNGICIDES: A STATUS REPORT by Paul Vincelli

During the past decade, Chipco Signature fungicide (active ingredient *fosetyl-Al*) became a "keystone" product for disease control programs on many golf courses across the country. This is in part because of the general enhancement in quality on stressed turfgrass that has been reported in some studies, including

selected tests at the University of Kentucky. The product is also known to provide control of Pythium cottony blight in many circumstances, particularly when sequential applications are made.

Fosetyl-Al is absorbed into the plant and converted to a phosphite (=phosphonate) ion (PO<sub>3</sub><sup>-</sup>). An interesting and important fact is that the phosphite ion is the principal chemical responsible for disease control. Although a variety of chemically simple, inexpensive phosphite salts were known to provide disease control in the late 1970's, the language of Rhone-Poulenc's patent apparently permitted exclusive development of phosphite materials as fungicides.

After fosetyl-Al recently came off patent, several fungicide manufacturers and formulators brought to market phosphite materials as fungicides. Turf fungicides for which I have current labels include Magellan, Resyst, Alude, Prodigy Signature, and Vital. The active ingredients in all these turf fungicides are phosphite salts, such as potassium phosphite, ammonium phosphite, sodium phosphite, and aluminum phosphite. These salts release phosphite ions onto the leaf surface, which are taken up by the plant. Thus, in theory, these phosphite fungicides should provide equal performance to fosetyl-Al. In reality, determining how generics compare to a well-established fungicide like fosetyl-Al will take several years of study. However, a status report of the research to date will undoubtedly be of interest to the many users of generic phosphite fungicides.

**Summary of Available Data**

Last summer, in our first year of systematic comparison of phosphite fungicides at UK, I was surprised to see significant differences in performance among the materials (see Table 1). We saw variability in both dollar spot control and in overall quality in turf. (Note that we deliberately overlooked dollar spot damage in the turf quality ratings presented in Table 1, to address the question, "How would these plots look if dollar spot were controlled?") Significant differences in formulation would likely account for the differences in performance we saw in this test.

I also reviewed all volumes of the journal *Fungicide and*

*Nematicide Tests* as well as other published sources from other sources. Only a handful of tests were found, which was surprising given the number and availability of generic phosphite fungicides on the market. Results are as follows:

- For control of Pythium cottony blight, Magellan provided control that was equal to or better than Chipco Signature in both trials where it was tested.. In the only trial where tested, Alude and Vital provided control that was equal to that of Banol fungicide, a generally effective Pythium material.
- Against anthracnose, the product Fosphite did not provide any control of anthracnose.

In addition to the phosphite-based fungicides, there are several phosphite-based turf fertilizers, "nutritional supplements", and "conditioners" on the market. Most of these have not been formally tested for disease control capabilities. The only one that has, to my knowledge, is PK-Plus, which provided significant levels of anthracnose control when used in combination with Gary's Green + Ultraplex. Fertilizer materials and supplements can sometimes provide an increment of disease control, so such a result is not unheard of, but it is gratifying when this is shown in scientifically valid research trials. Unfortunately, the phosphite fertilizers do not come with explicit instructions on using them for disease control, because they cannot be marketed as disease-control chemicals without being subject to federal regulation.

**Conclusion**

It is my understanding that the generic phosphite fungicides are considerably less expensive than Chipco Signature. However, none has been subjected to as thorough testing as have formulations of fosetyl-Al. More testing is needed of the efficacy of generic phosphite fungicides for my comfort zone. Clearly, they all provide some disease control, but the data to date suggest they are not all equal. Whether the differences we observed in 2003 will hold up year after year remains to be seen. Whether the differences we observed in 2003 are worth the additional cost is a judgement call only the superintendent can make.

**Table 1. Selected Results from 2003 Comparison of Phosphite Fungicides in a Putting Green Spray Program.**

Treatment and rate/1000 sq ft	Spray interval (wk)	Turf quality <sup>a</sup>		No. DSIC <sup>b</sup> per plot	
		22 Jul	5 Aug	15 Jul	30 Jul
Water	1	4.7 c	3.3 c	72.0 c	57.3 c
Chipco Signature 80WG 4 oz + Chipco 26GT 2SC 2 fl oz <i>ALTERNATING WITH</i> Chipco Signature 80WG 4 oz + Daconil Ultrex 82.5WDG 1.6 oz	2	7.5 a	5.3 a	0.0 a	1.7 a

Resyst 45.8S 5 fl oz + Chipco 26GT 2SC 2 fl oz ALTERNATING WITH Resyst 45.8S 5 fl oz + Daconil Ultrex 82.5WDG 1.6 oz	2	6.3 b	5.0 ab	1.0 ab	7.7 b
Vital 4L 6 fl oz + Chipco 26GT 2SC 2 fl oz ALTERNATING WITH Vital 4L 6 fl oz + Concorde 82.5WDG 1.6 oz	2	5.7 bc	4.3 bc	2.0 b	10.0 b
Alude 5.17L 5 fl oz + Chipco 26GT 2SC 2 fl oz ALTERNATING WITH Alude 5.17L 5 fl oz + Daconil Ultrex 82.5WDG 1.6 oz	2	6.0 b	4.7 ab	1.0 ab	9.3 b

<sup>a</sup>1-9 scale, where 9 = excellent turf quality. Excludes dollar spot damage. Waller-Duncan k-ratio test, k = 100, P = 0.05.

<sup>b</sup>DSIC = dollar spot infection centers. Waller-Duncan k-ratio test, k = 100, P = 0.05.

## SHADE TREES & ORNAMENTALS

### MANAGE ROSE BLACK SPOT WITH DISEASE-TOLERANT CULTIVARS

by John Hartman

Roses are a popular landscape and garden plant in Kentucky. Black spot, caused by the fungus *Diplocarpon rosae*, is the most important foliar disease of roses in Kentucky. It is a serious problem every year under our warm, humid growing conditions. Infected leaves become spotted, turn yellow and drop from the plant. This defoliation decreases plant energy reserves and results in reduced flowering of roses. Kentucky growers wanting to maintain good health of their susceptible rose cultivars are almost obligated to use repeated applications of fungicides throughout the growing season. If rose growers could grow genetically resistant or disease tolerant roses, they would benefit from improved performance and reduced fungicide use.

Rose cultivars are evaluated for disease reactions. Plant Pathologists from around the U.S. periodically evaluate rose cultivars for their reaction to black spot disease. The following black spot-resistant rose lists were assembled from reports of evaluations done in Virginia, Louisiana, Florida, Texas, and Washington. Some of these test results were printed in recent issues of *Biological and Cultural Tests for Control of Plant Diseases*, an annual journal published by the American Phytopathological Society. Many of these cultivars are also listed in the publication *Pest Resistant Ornamental Plants* by Deborah C. Smith-Fiola of the Rutgers Cooperative Extension Service.

Disease reactions can vary from one location to another depending on disease pressure. Cultivars with resistance may still develop symptoms under high disease pressure, but they survive black spot without much damage to the plant. It is possible for rose disease resistance to break down due to the black spot fungus adapting to the plant's resistance, so resistance can be lost. Nevertheless, the roses listed here should perform well during most Kentucky disease outbreaks and with less fungicide than most roses.

Are Kentucky growers trying these roses? No doubt some growers have tried the disease-tolerant roses. County Agents advising rose growers will want to advise their clients to try these improved rose cultivars. Rose growers could increase their leisure time and decrease their fungicide expenses by using disease resistant and tolerant roses.

Black spot resistant hybrid tea roses: Alec's Red, Auguste Renoir, Bride's Dream, Canadian White Star, Carla, Cary Grant, Cayenne, Charlotte Armstrong, Chrysler Imperial, Dainty Bess, Duet, Electron\*, Elina, Elizabeth Taylor, First Prize, Forty Niner, Frederic Mistral, Granada, Great Scott, Helmut Schmidt\*, Just Joey\*, Keepsake\*, Lady, Lady Rose, Lady X, Las Vegas\*, Love and Peace, Marilyn Monroe, Marijke Koopman, Mikado, Miss All-American Beauty, Mister Lincoln, Nantucket, New Day\*, Olympiad, Otto Miller, Pascale, Peace, Peggy Rockefeller, Peter Frankenfeld\*, Peter Mayle, Pink Peace, Polarstern\*, Portrait, Precious Platinum\*, Princess of Monaco, Pristine, Proud Land, Sheer Bliss, Silver Jubilee\*, Smooth Lady, Sunbright, Sutters Gold, Tansinnroh, The McCartney Rose, Tiffany, Tropicana, Uncle Joe, and Voodoo\*.

Black spot resistant floribunda and grandiflora roses: Angel Face, Betty Prior, Bill Warriner, Bonica\*, Brass Band, Candelabra, Carousel, Cathedral, Charlotte Ann, City of London, Class Act, Escapade, Europeana\*, Fashion, First Edition, First Kiss, French Lace, Gene Boerner, Goldilocks, Gruss an Aachen, Hot Cocoa, Iceberg\*, Impatient\*, Ivory Fashion, Koricole, Lavaglut, Livin'Easy, Love\*, Matangi\*, Mirandy, Montezuma, Nearly Wild, New Year\*, Orangeade, Pink Parfait, Playboy\*, Playgirl\*, Pretty Lady, Prima Donna, Prominent, Queen Elizabeth, Razzle Dazzle, Red Gold\*, Regensburg\*, Rose, Parade, Sarabande\*, Sexy Remy\*, Showbix\*, Simplicity, Sonia, Sun Flare, Sunsprite, Tournament of Roses\*, Trumpeter\*, and Viva\*.

Black spot resistant shrub roses: Shrub roses are normally pretty resistant to black spot disease. There are many more black spot resistant cultivars than those listed here. Alba Meidiland, All That Jazz, Baby Love, Belinda's Dream, Caldwell Pink, Carefree Beauty, Carefree Delight, Carefree Sunshine, Carefree Wonder, Distant Drums, Else Poulsen, George Vancouver,

Harrison's Yellow, Katy Road Pink, Knock Out, Mrs. R. M. Finck, Prairie Harvest, Prairie Sunrise, Robusta, Sea Foam, Simon Fraser, Simplicity, Sir Thomas Lipton, The Fairy, Wanderin' Wind, and Winter Sunset.

Black spot resistant climbing roses: Dortmund\*, Dublin Bay\*, Eden, John Davis, New Dawn, Pinkie, Prosperity, Rambling Red, Red Climber, Royal Sunset\*, and William Baffin.

Black spot resistant miniature roses: Always a Lady, Angel Darling, Anytime, Apricot Twist, Baby Betsy McCall, Beauty Secret, Black Jade, Centerpiece, Cinderella, Cuddles, Deep Velvet, Green Ice, Gourmet Popcorn, Jennifer, Linville, Little Artist, Loving Touch, Magic Carrousel, Minnie Pearl, Old Glory, Pacesetter, Queen City, Rainbow's End, Red Cascade, Red Flush, Rose Gilardi, Simplex, Singles Better, Sweet Pickins, Watercolor and Work of Art.

Black spot resistant Rugosa hybrid roses: Rugosa roses are normally resistant to black spot disease. These and other cultivars should do well. Blanc double de Coubert, F. J. Grookendorst, Frau Dagmar Hartopp, Linda Campbell, Polyantha, Rugosa Alba, Rugosa Magnifica, Rugosa Rubra, Rosecraie de l'Hay, The Fairy, and Therese Bugnet.

\*Also resistant to powdery mildew and rust diseases.

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.