Cooperative Extension: Colorado State University, Fort Collins, Colorado 80523

Pest Alert

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RED ROOT ROT MORE COMMON ON CORN THIS FALL

Last year we brought to your attention a new stalk rot of corn called red root rot. This disease historically has been most common along the Atlantic states where yield losses of 15-20 % have been reported in some cases. This year it is being found with increasing frequency in Northeastern Colorado corn fields.

Red root rot is caused by *Phoma terrestris* (syn *Phrenochaeta terrestris*), a fungus generally associated with pink root of onions. The symptoms are not usually seen until just before senescence. So far they are being found during harvest. The major symptom is a reddish pink discoloration of the root system and basal stalk tissue. This may be confused with Fusarium stalk rot and in fact, in many cases it is believed that the disease is a combination of *Fusarium and Pythium* fungi and *P. terrestris*.

The most apparent above ground symptoms are found during the late stages of ear filling and show as a premature death of the corn plant. As with many stalk rot diseases the leaves and stalks become grayish in appearance thus giving the plant an overall wilted appearance. Severe lodging may quickly follow.

The fungus survives as microsclerotia in diseased roots and adjacent soil. They are especially important for long term survival of the fungus in soil. The fungus is generally recognized as a widespread saprophyte and weak parasite on underground plant parts. The fungus is found in many types of soil and can survive over a wide temperature and pH conditions. It also produces a pynidial stage where the fungus reproductive bodies appear dark brown/black in color, are small (smaller than the size of small pepper grains) found on diseased roots.

The rate of disease development is reported to vary greatly among corn genotypes. There is practically no information on resistance or viable management of red root rot. At this time, rotation is reported to provide some control. As we learn more we will let you know. (Brown)

TURF GRASS AND FERTILIZER

Winterizing fertilizers are often recommended for application in the fall. These products contain low levels of nitrogen and high levels of phosphate and potash. Research shows turf does best when Nitrogen applied late in the season (between October 15 and December 15) enhances late fall color retention and the corresponding high chlorophyll content. The resulting higher level of carbohydrate lessens stressed turf at the start of the growing season. The incidence and/or severity of some winter diseases will be reduced, and disease damaged turf recovers quicker when this program is followed Fertilizer should be applied after the final mowing of the season so that excess growth is avoided. The grass should still be green when this fertilizer application is made. This may be anytime from late September through mid November.

Two pounds of actual nitrogen should be applied per one thousand square foot of lawn area. If ammonium sulfate (~20% nitrogen) is applied, it will take ten pounds of this fertilizer per 1000 square feet. There is no evidence to suggest that extra P or K in the fall is beneficial to bluegrasses, ryegrasses, or fescues unless a severe deficiency of these nutrients exists.

If you need further information on this check out the Northwest web page at:

http://www.colostate.edu/Depts/CoopExt/TRA/PLANTS/turf-lsf.html

(Curt Swift, Coop. Extn. Grand Junction)

NOTES FROM CURT SWIFT ON MYCORRHIZAE

Mycorrhizae are an integral part of most plants in nature (Giazninazzi et al., 1982)[1] and occur on 83% of dicotyledonous and 79% of monocotyledonous plant investigated (Wilcox - 1996). Upon root infection and colonization, mycorrhizal fungi develop an external mycelium which is a bridge connecting the root with the surrounding soil (Toro et al. 1997).

The benefits listed above are greatest in P-deficient soils and decrease as soil phosphate levels increase (Schubert & Hayman, 1986).

Very high and very low phosphorus levels may reduce mycorrhizal infection/colonization (Koide, 1991). It is well established that:

- infection by mycorrhizal fungi is significantly reduced at high soil phosphorus levels (Amijee et al., 1989; Koide & Li, 1990).

- the addition of phosphate fertilization results in a delay in infection as well as a decrease in the percentage of infection of roots by mycorrhizae (deMiranda, Harris & Wild, 1989; Asimi et al).

- an increase in the level of soil phosphate results in a reduction in chlamydospore production by the fungus (Menge, et al. 1978) These spores are involved in root infection and spread of the fungus. Research by Abbott and Robson (1979) concluded that levels of soil phosphorus greater

[1] Contact Curt Swift, Tri River Area Coop. Extn., P.O. Box 20,000-5028, Grand Junction, CO 81502-5028, for a list of references cited in his article. (Brown)

than that required for plant growth eliminated the development of the arbuscles of vesicular-arbuscular (VA) types.

When the soil level of bicarbonate-soluble phosphorus exceeded 140 mg kg -1 (140 parts per million) the rate of infection was found to decrease (Amijee et al. 1989). Abbott and Robson (1977 & 1978).

Summary and recommendations:

The benefits of mycorrhizae are greatest when soil phosphorus levels are at or below 50 ppm (50 mg kg -1). Mycorrhizal infection of roots declines above this level with little if any infection occurring. Prior to inoculating soil with mycorrhizae, a soil test should be conducted. If phosphorus levels are greater than 50 ppm the addition of mycorrhizae will likely be ineffective.

The level of phosphorus in the plant also has been shown to influence the establishment of VA mycorrhizae with high levels inhibiting colonization by mycorrhizae (Menge, et al. 1978). (Curt Swift, Coop. Extn., Grand Junction)

MONSANTO WON'T SELL 'TERMINATOR' SEED

Monsanto recently stated that they would not commercialize seed technologies, like the controversial "Terminator", that render seeds sterile. In a letter to Dr. Gordon Conway, the President of the Rockefeller Foundation, Bob Shapiro wrote the decision is based on Conway's input and the input from other experts and stakeholders, including growers.

Monsanto holds patents on other forms of gene protection that do not render seeds sterile. Shapiro says the company does not rule out development and use of such technologies in the future. (taken from a USDA e-mail Pest Managers Listserve, Brown)

GLYFOS LICENSED FOR 2000 USE ON ROUNDUP READY CORN

Licensing agreement means competition for Roundup, Cheminova, maker of Glyfos and Glyfos X-TRA, has gained licensing access to Roundup Ready corn and cotton for the 2000 seasons. The specific brands of Glyfos herbicide labeled for use on each crop will be included in Monsanto's technology use guide for each crop. Monsanto's Roundup and Roundup Ultra herbicides and Cheminova's Glyfos and Glyfos X-TRA herbicides will compete in the marketplace. (taken from an USDA e-mail Pest Managers Listserve, Brown).

ANNUAL TURF MEETINGS SCHEDULED FOR DECEMBER 7-9, 1999

The 46th Rocky Mountain Regional Turfgrass Conference and Trade Show will be December 7-9 at Currigan Hall in Denver. This program is the premier turf program in the Rocky Mountain area and each year gets bigger and better.

Along with the recertification workshops on Tuesday December 7 there are many sessions that also provide opportunities for recertification credits. Some of the topics include:

- native plants-fad or fabulous
- using soil testing to develop a turf fertility program
- everything you need to know about irrigation fittings and gluing pipe
- turfgrass ornamental disease and diagnosis
- wetland planning and construction
- pesticides and their families
- golf course remodeling

Early bird registration is up to November 12. To receive an application or for more information contact the Rocky Mountain Regional Turfgrass Association (RMRTA) at (303) 770-2220 or email rmrta@gwami.com
(Brown)

ANNUAL CROP MANAGEMENT CLINIC SCHEDULED FOR JANUARY 4-6, 2000

The Crop Management Clinic for 2000 will be on Integrated Pest Management (IPM). This program will set the stage for the 3rd cycle of Colorado State University Cooperative Extension Crop Management Clinics that have become popular during the last 10 years.

The principals and techniques of IPM that will be covered will be the basis of subsequent yearly clinics on Corn, Wheat, Beans, Potatoes, Alfalfa, etc that will sequentially take place over the next multi-year cycle of Crop Management Clinics. The clinic is divided into 3 main sections, Principals of IPM, Practices of IPM and IPM and the Future.

As in prior years the registration cost ($150) for the 3-day clinic includes tuition, course notes with a reference collection, beverage breaks, and lunch on Wednesday. This fee will honor all registration postmarked and paid by December 1, 1999. Late registration will be $200 and no single day registrations will be accepted.

For further information about program content, contact Frank Peairs at (970) 491-5945 or e-mail at fbpeairs@lamar.colostate.edu or contact Bruce Bosley at (970) 867-2493 or e-mail dbbosley@coop.ext.colostate.edu.

Registration forms can be obtained at your local Cooperative Extension office or by contacting the CSU Office of Conference Services via e-mail at ocsreg@lamar.colostate.edu or phone (970) 491-7501 or FAX (970) 491-3568.

We look forward to seeing you there. (Brown)

WESTERN SLOPE TREE CARE WORKSHOP

Two Rivers Convention Center
159 Main Street, Grand Junction, Colorado

THURSDAY, NOVEMBER 18,1999

7:30 AM Registration, Coffee and Donuts
8:15 AM Welcome, Announcements and Introductions
8:30 AM Soil: the basis for a Happy Tree (Curt Swift - CSU Tri River Extension)
9:15 AM Junk in = Junk out: Selecting the right tree at the nursery (Vince Urbina - CSFS Grand Junction District)
10:00 AM Break
10:15 AM Biology of tree pruning. What you need to know. (Tim Buchanan - Fort Collins City Forester)
11:00 AM Using the four types of cuts: When and when not to. (Tim Buchanan)
12:00 PM Lunch - Provided by Two Rivers Convention Center
1:00 PM Pruning continued (Tim Buchanan)
1:45 PM Field exercises (30 minutes per station)
Station I -Pruning young trees. (Vince Urbina)

Station 2 - Pruning trees 2 " - 12 " caliper. (Tim Buchanan)
Station 3 - The use of ropes & saddles on large trees. (Tom Ziola)
3:15 PM Wrap-up

Forms will be available at the workshop for those interested in ISA certification credits. (CEUs)

Registration cost of $15.00 includes lunch, (ISA Tree Pruning Guidelines booklet for each paid attendee)

Register by Mail: _____
Company/Organization_____
Address_____
Contact Person_____ Phone_____

(Please List Names of ALL Attendees)

No. of Attendees _____
Amount Enclosed $ _____

Mail Checks Payable To: City of Grand Junction (Forestry Division)
1340 Gunnison Avenue, Grand Junction, Colorado 81501

Register by Phone: City of Grand Junction (Mike Vendegna) (970) 244-1549 or
Colorado State Forest Service (Vince Urbina) (970) 248-7325

Register by November 12th

POLICY PAPER ON ROLE OF USE-RELATED INFORMATION PUBLISHED

On July 14, 1999, EPA published a Federal Register notice announcing the availability of a draft document for public comment- The Role of Use-Related Information in Pesticide Risk Assessment and Risk Management. This paper is being released for a 60-day public comment period, as part of a process developed in conjunction with the Tolerance Reassessment Advisory Committee (TRAC) to ensure that EPA s policies related to implementing the Food Quality Protection Act (FQPA) are transparent and open to public participation. The paper announced in this notice summarizes the types of use-related information used by EPA in risk assessment and risk management, where the data come from, and how the Agency employs these data.
The Federal Register notice includes questions on which EPA is particularly seeking comment. The paper is available through the OPP Docket and on the Internet at:
www.epa.gov/pesticides/trac/science/.

Comments can be submitted in person, by mail, or electronically as described in the Federal Register notices. The Federal Register notice is available electronically at www.epa.gov/fedrgstr. (McDonald)

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Where trade names are used, no discrimination is intended, and no endorsement by the Cooperative Extension Service is implied.

Sincerely,

William M. Brown, Jr.
Extension Plant Pathologist