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Rhizoctonia Brown Patch

by Kevin Mathias

Two papers were presented on *Rhizoctonia* Brown Patch at the recent Turfgrass Disease Symposium held in Columbus, Ohio. The papers presented and the authors were: *Rhizoctonia* Brown Patch — Symptoms, Diagnosis and Distribution by B.G. Joyner and Techniques Used in the Identification of *Rhizoctonia solani* and Related Organisms by L.L. Burpee.

Turfgrass diseases caused by the causal agent, *Rhizoctonia*, exhibit a range of symptoms dependent upon the height of cut, the turfgrass type, and the season of the year. Under close mowed turf and during the summer months, the usual symptom is circular shaped matted turf with individual leaves completely blighted. Coloration of the affected area will range from purplish green during the early stage of disease development and will rapidly change to brown. If weather conditions are appropriate, high humidity and +85°F temperature, the typical "smoke-ring" symptom will develop. Diseased turf may vary from several inches to several feet in diameter and the time period for blighting may take only 6-8 hours.

Under high mowed turf, such as in roughs and home lawns, initial symptoms will be irregular blighted areas ranging in size from several feet up to 40 feet in diameter. The direction of movement is affected by watering practices and drainage patterns. Once again the period of symptom expression is extremely rapid. Individual lesions are not always distinct and in some situations may appear to resemble leafspot while in other situations a blighting of the leaf will occur from the tip down. All major turfgrass types in this area are affected by this disease.

Cool weather brown patch is active at the 60-65° regime and will normally appear during the spring and fall months. It appears to be more predominant on the bentgrasses under putting green management. Affected turf will have a bleached appearance and individual leaves will maintain an upright growth pattern versus the matted appearance for the warm disease counterpart. Affected areas will have a circular pattern.

Burpee's paper identified three species of *Rhizoctonia* which are associated with turfgrass diseases in the United

States. These species are *Rhizoctonia solani*, the warm weather causal agent; *Rhizoctonia cerealis*, the cool weather causal agent; and *Rhizoctonia oracizi*, the causal agent on St. Augustinegrass and on rice. The species *solani* and *cerealis* appear to be the major causal agents in the area.

Laboratory differentiation of the *Rhizoctonia* species is performed in a number of different ways. The steps normally employed are nuclear staining, cultural characteristics, anastomosis compatibility, and sporulation characteristics. *R. solani* is multinucleate having brown pigmentation on PDA and displays different anastomosis strains. This pathogen also has the ability to sporulate on an agar medium. *R. cerealis* is binucleate and when cultured on PDA will produce a white to buff color. Different anastomosis strains are present and the pathogen has not yet been shown to sporulate on an agar medium.

During the question and answer period an interesting point was mentioned by Smiley from Cornell. He reported that during fungicide field evaluations he observed an increased incidence of cool weather brown patch when various types of fungicides were applied in the fall for snow mold control. When products containing pentachloronitrobenzene (e.g. Terrachlor 75, Terrachlor 106, and Actidione RZ) were applied in December very slight cool season brown patch was noted in the late winter. However, if Actidione alone (e.g. Actidione T6F) or with thiram (e.g. Actidione Thiram) was applied greater disease incidence at the higher rates (8 oz./1,000 sq. ft.) were observed. This was also the case for Tersan SP and for Tersan SP and Actidione T6F in combination.

Warm weather brown patch in this area appeared to cause considerable damage to turf in August 1978. The severity of the disease was extremely intense and field evaluations often led to improper diagnosis. Microscopic identification in conjunction with field diagnosis is the only positive means of determining the causal agent. Both cool and warm weather brown patch can be diagnosed from *Phythium* incited diseases by using field and microscopic identification techniques. The following is a brief table of characteristics for *Rhizoctonia* and *Phythium*.

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Rhizoctonia (continued from page 1)

Characteristics	Rhizoctonia	Phythium
1. Presence of sclerotia	yes	no
2. Presence of mycelium	yes	yes
3. Mycelial branching (right angle)	yes	no
4. Presence of cross walls	yes	no
5. Turfgrass blighting	yes	yes

Field diagnosis in itself will not always substantiate disease identification and the implementation of microscopic evaluation can be both cost saving and educational. The Maryland Cooperative Extension Service has just initiated a plant diagnostic laboratory for ornamental and turfgrass diseases. The laboratory is fully staffed and this service will greatly enhance field evaluations for teaching, research and extension personnel.

Gasohol and Small Engines

With the recent rise in gasoline prices, gasohol, a mixture of 10 percent alcohol and 90 percent gasoline, has been receiving widespread publicity. In some parts of the country, it is widely available at service stations and some resourceful people are distilling their own alcohol to mix with gasoline.

While the use of gasohol in automobiles is still a matter of controversy, scientists at the Tecumseh Research Laboratory, Ann Arbor, Mich., warn that it can have serious effects on small engines.

Tecumseh scientists say that most gasohol contains grain or methyl alcohols which may react with the water content of the fuel to form strong acids. These acids can corrode metal parts and eat rubber and plastics.

Except for cold-weather starts, automobile engines do not use a rich fuel-to-air ration. Small engines, however, do run on a rich mixture and they are frequently stored for long periods of time.

This is particularly evident in the case of turf maintenance equipment where both the equipment and the fuel supply may be stored during the off-season. If you want to use gasohol or any other synthetic fuel in your equipment, you should check first with the dealer or the manufacturer.

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Welcome To Woodmont — Oct 9

B. Shields

Once more it is my pleasure to invite you and your guests to visit Woodmont Country Club — to play golf, cocktails, dinner and then a meeting.

Woodmont has two 18 hole golf courses, and you can play either one, but the association tournament will be played on the North Course.

Frank Murray built the North Course, and it was opened to play in 1950. The 6520 yard course was designed by Al Tull, who also did Norbeck and Westwood. He drew up plans for the back nine of the South Course, and we built it ourselves. It was opened for play in 1956 when Vice President Nixon cut the ribbon. The front nine of the South Course, was designed and built by Leo Freudberg, Green Chairman at that time and myself. It was opened in 1960 and measures 6290 yards.

The greens were C-1 and C-19 bent grass when the course opened, but after many years of overseeding with Penncross bent grass seed very little of the original grass remains. Greens are seeded at the rate of one pound of Penncross bent to each green during each month of the growing season. They are cut at 3/16 everyday but Monday.

The fairways were seeded with blue grass and fescue, but that didn't last long so we planted U-3 Bermuda. That went out with the cold winter of '62-'63, but we kept planting the strains that survived the winter with only short-lived success. We used Paraquat two years in a row and then seeded with common Bermuda, but the fairways never got real good until too late in the season.

In 1973 we overseeded with Perennial Rye grass and have done so each fall since that time. As you play the course, you will see very little Bermuda grass on the fairways — the rye grass has almost crowded it out of the picture.

This year's fairway seeding operation may be in progress while you are here. We apologize for any interruption of play, but the job must be done.

We are overseeding with Pennfine and Manhattan Rye at 100 pounds per acre. The fairways are aerified, then followed by the disc-type seeder with half the seed. Two weeks later we seed again with the rest of the seed.

The tees are also seeded to perennial rye grass and are cut at 1/2" three times a week. Numbers one South and seven North are bent grass tees built on a sand mix, on top of gravel and tile. Divot marks look bad, but they heal quickly.

Tee-off time is anytime after 12:00 noon. See our starter Frank, at the first tee. Tony Marlowe, Golf Professional, will be around to assist or answer questions regarding the tournament. Golf carts are available, but please, no hand carts.

CLUB RULE: The Club has a rule that coats and ties must be worn in the dining room. The Mid-Atlantic made the same rule years ago, and I think it should be observed. Inform your guest about this rule so no one will feel embarrassed.

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