TO HAVE GREEN GRASS

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The problem of learning how to successfully grow annual bluegrass (Poa annua) is one of education or re-training. It has been considered an undesirable weed for so many years that it is difficult for people to accept it as a desirable turfgrass. It is not a weed and if managed properly provides a satisfactory turf in the cool season grass belt. Many golf course superintendents refuse to admit they have any annual bluegrass or deliberately underestimate how much. Part of the reason for not admitting to having annual bluegrass is because of the stigma attached to it being a weed. Therefore, if it is a weed, "I must be a poor superintendent if I can't control it." The reason for the stigma attached to annual bluegrass came from educators in the universities. They were convinced it really was a weedy annual grass that died from high temperature during the summer heat stress period. Little research has been done on cultural aspects, disease problems or insect problems on annual bluegrass due to this attitude. Research was done instead on Kentucky bluegrass and creeping bentgrass. Very few people actually had these on their golf courses. The results transposed to annual bluegrass often did not work.

On golf courses 10 years or older in the northern region of the cool season grass belt annual bluegrass is the largest single component. It has been successfully grown on golf course greens for years. Pest control programs have been practiced on the greens, just as such programs have been neglected on the fairways.

Many a golf course superintendent has spent a great deal of time, money, and effort trying to control annual bluegrass with the arsenical. Most lost their fairways, many lost their jobs. The smart ones either got off arsenical programs or else never got on one. The educators were at fault for not conducting research programs on the arsenicals for recommendations which were made. More research has been done now on the arsenicals since production of them was halted. Rieke (1) showed that soil pH was a critical factor in calcium arsenate being effective. Calcium arsenate was more effective at lower soil pH's. This explained why it worked better on the low pH soils of the East Coast than it did on the higher pH soils of the Midwest. Turgeon (2) showed turfs growing in calcium arsenate soil were generally growing in thatch. Knowing both these facts, initially, may have made calcium arsenate programs more effective, safer, or caused people to think twice about using them at all.

Fairways vs Greens

In spite of the fact that good pest control practices are carried out on annual bluegrass greens, very poor pest control practices are carried out on annual bluegrass fairways. It is difficult to understand the logic behind this. If one knows the treatment of annual bluegrass greens for diseases and insect problems is necessary, why should one not apply the same treatments on the fairway in order to keep them healthy? But there is a logical explanation, and it deals with the accepted belief that the annual bluegrass is dying from high temperature stress alone. If high temperature is the primary reason for the grass dying, the method of preventing this will be through irrigation instead of pest control. However, it has been clearly demonstrated that high temperature alone was not the reason for annual bluegrass dying. A fungus disease, called anthracnose destroys

the annual bluegrass during the hot weather. In addition, the Ataenius beetle grub has been shown to be responsible for the loss of annual bluegrass fairways during heat stress periods. Blaming the loss of annual bluegrass on high temperature prior to 1975 is understandable. The facts concerning annual bluegrass survival were not known. The information is available now and yet annual bluegrass fairways are still dying, and the blame is still being placed on "that lousy annual bluegrass" dying in the hot weather.

If we further examine the history of fairway watering we find that initially only golf course greens were watered. The green fairways of spring were allowed to go dormant in the summertime and would green up again with the return of fall rains. These fairways were primarily common Kentucky bluegrass, colonial bentgrass and fine leaf fescue. Then someone got the idea that all that was necessary to have green fairways all summer long was to water them. Fairways were irrigated and mowed closer. The Kentucky bluegrass, colonial bentgrass and fine leaf fescue fairways soon became soft lush annual bluegrass fairways. What was overlooked was the pest control programs that were carried out on golf course greens. Golf course superintendents observed common diseases like dollar spot or brown patch on their fairways and sprayed when they became severe. The two problems that weren't recognized were anthracnose and the Ataenius beetle grub. These fell into the category of high temperature killing of annual bluegrass.

It is Expensive to Treat Fairways for Diseases and Insects!

What happened in the past is understandable. If dollar spot and brown patch were the only major diseases on annual bluegrass fairways, the statement that it is too expensive to spray is understandable, although I don't agree. Dollar spot and brown patch are unsightly but occur slowly enough that they can be treated on a curative basis. Large dead areas of the fairway caused by anthracnose and the Ataenius beetle grub must be treated if you expect "to have green grass on the fairways."

From 50,000 to 500,000 dollars are spent to install an irrigation system, "to have green grass in the fairways." Thousands of dollars each year are spent on water, "to have green grass on the fairways." In addition, thousands of dollars are spent on miscellaneous equipment such as aerifiers, spikers, and vertical mowers "to have green grass" on the fairways. From a few thousand up to 15,000 or so dollars are spent for the finest mowing equipment, "to have well-manicured green grass on the fairways." Between three to fifteen thousand dollars is spent to fertilize the fairways, "to have green grass." But you can't spend between 5-10 thousand dollars a year to treat the fairways for disease and insect problems, because "it is too expensive?" You have over a half a million dollar investment for the purpose of "having green grass on the fairways." You wouldn't consider not watering on a hot day because it was too expensive. Why? "Because the grass would die." What difference does it make if the grass dies from drought or disease, or if the money is spent on water or fungicide, in order "to have green grass" on the fairways. The answer is "None."

Put It in Your Budget

Put the cost of fungicides and insecticides in your budget. Present a strong case for them. Ask your Greens Committee whether or not they want "to have green grass" on the fairways all summer long.

Cultural Program for Annual Bluegrass Fairways

Mowing Height -- 1/2-5/8 inches.
Watering -- infrequently and deep during cool weather.
-- light and often during warm weather including syringing when

necessary during warm periods of the day.

Fertility -- nitrogen (See schedules).
-- phosphorus and potassium (as needed based on soil test).

Fungicide program -- "Poa" fairways (See schedule).

There are 4 major diseases on "Poa" which occur during the growing season: anthracnose, dollar spot, Pythium blight and brown patch. Anthracnose is the most serious of these and attempting to grow "Poa" without controlling it is futile. The schedule should provide adequate control of all these disease problems.

Insecticide -- "Poa" fairways.

Applied to areas of the fairway where the insects are a problem. Once the problem is present, insecticide schedules should be set up to treat those affected areas on a yearly basis.

Literature Cited

1. Rieke, P. E. 1973. Nitrogen responses and arsenic studies on turf. Michigan Turfgrass Conference Proceedings 2:17-24.

2. Turgeon, A. J., R. P. Freeborg, and W. N. Bruce. 1975. Thatch development and other effects of preemergence in Kentucky bluegrass turf. Agron. J. 67:563-565.

Fungicide Schedule for Annual Bluegrass Greens, Tees and Fairways in Cool Season Grass Belt Region 1

Region	March 1	March 15	April 1	April 15	May 1	May 15	June 1	June 15	July 1	July 15	August 1	August 15	September 1	September 15	October 1	October 15	November 1	November 15	December 1	December 15	January 1	January 15
Southern																						
High Maintenance			S	NS	NS	S			NS	NS	S		NS	NS	NS	NS	NS	NS				
Low Maintenance					NS	S			NS	NS	S		NS									
Diseases	Fusarium Patch				Dollar Spot							Dollar Spot							Fusarium Patch			
						Brown Patch																
					Anthracnose																	
							Pythium Blight													Typhula Blight		
Middle																						
High Maintenance				NS	NS	NS	S		NS	NS	S		NS	NS	NS	NS	NS					
Low Maintenance						NS	S		NS	NS	S		NS		NS							
Diseases	Fusarium Patch														Fusarium Patch							
							Dollar Spot															
							Brown Patch															
							Anthracnose															
									Pythium Blight											Typhula Blight		
Northern																						
High Maintenance					NS	NS	S		NS	NS	S		NS	NS	NS	NS						
Low Maintenance							NS	S		NS	S		NS									
Diseases								Dollar Spot														
								Brown Patch														
							Anthracnose							Fusarium Patch								
		Fusarium Patch																Typhula Blight				
		Typhula Blight																				
									Pythium Blight													

NS - non-systemic or contact fungicide
S - systemic fungicide (benzimidazole)

Annual Bluegrass Nitrogen Fertility Schedule

Region	April 1	April 15	May 1	May 15	June 1	June 15	July 1	July 15	August 1	August 15	September 1	September 15	October 1	October 15	November 1	November 15	December 1	December 15
Southern	lbs Nitrogen/1000 sq ft																	
High Maintenance				1/2		1/2		1/2		1/2		1						1
Low Maintenance						1/2						1						1
* Diseases						Brown patch———												
								Pythium blight——										
	Fusarium patch														Fusarium blight———			
															Typhula blight———			
Middle	lbs Nitrogen/1000 sq ft																	
High Maintenance						1/2		1/2		1/2		1				1		
Low Maintenance						1/2						1				1		
* Diseases								Brown patch———										
								Pythium blight—										
												————		Fusarium patch				
	Fusarium patch———											————		Typhula blight				
Northern	lbs Nitrogen/1000 sq ft																	
High Maintenance						1/2		1/2		1						1		
Low Maintenance						1/2				1						1		
* Diseases								Brown patch——										
								Pythium blight										
	Fusarium patch											Fusarium patch						

* Time of season when excess nitrogen fertility will increase the severity of the disease listed and not necessarily the time of year the disease occurs.

This schedule is designed so that nitrogen applications will aid in the control of dollar spot and anthracnose which are not shown on the charts. This chart is based on fertilizing with water soluble nitrogen. Other less frequent schedules are possible with water insoluble nitrogen. It is impossible to make up general charts since the release of nitrogen is dependent on many variables. Examples include soil type, soil moisture, soil organic matter and weather (temperature and rainfall).