Managing Annual Bluegrass

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More and more people over the past several years have come to realize that annual bluegrass is only another turfgrass species. It has its good points and its bad points, just as all the other species do. One of its good points is its ability to provide an adequate putting surface at 1/8th inch height of cut or an excellent fairway at 5/8th inch height of cut. It provides an upright lie for the golf ball in the fairway and allows the fairways to be maintained in a softer condition during the summer months. It does have its share of disease problems, as do the other turfgrass species (Table 1). Annual bluegrass has an advantage that other species do not have in that if it is lost due to mechanical damage, diseases, or insects, it will replace itself from the viable seed which is in the thatch or soil layer. From a conceptual point of view, the advantage Kentucky bluegrass, creeping bentgrass and the new perennial ryegrasses have had over annual bluegrass is that they only die once. If annual bluegrass is mismanaged, it dies, but it will regerminate and replaces itself. Soon, annual bluegrass becomes the problem instead of mismanagement. More importantly, what is overlooked is the fact that the Kentucky bluegrass, creeping bentgrass, and perennial ryegrass also disappeared through mismanagement practices. However, the fact that they only die once, somehow makes them more desirable.

Each turf species, and in some cases each turfgrass cultivar, has its own particular ecological requirement. Kentucky bluegrass should: 1) be maintained at 1-1 1/8" mowing height, 2) receive between 1 to 4 pounds of actual nitrogen per 1000 square feet per season, and 3) receive minimal supplemental irrigation. Creeping bentgrass should recieve no more than 1 1/2 pounds of actual nitrogen per 1000 square feet per season and should also recieve minimal amounts of supplemental irrigation. Annual bluegrass is a nitrogen lover and it should receive 3 to 4 pounds of actual nitrogen per 1000 square feet per season. It can be mowed as low as 1/8 inch and it should be irrigated frequently. Trying to maintain Kentucky bluegrass at 3/4 of an inch will only result in a quick invasion by annual bluegrass. Likewise, over irrigating the Kentucky bluegrass fairways to make them a little softer during the summer period will result in the invasion, and the eventual takeover of the fairways by annual bluegrass. Creeping bentgrass has approximately the same mowing requirements as annual bluegrass. Like annual bluegrass it also can tolerate frequent irrigation. However, unlike annual bluegrass, creeping bentgrass will also do well on minimal irrigation, which gives it a competetive advantage over the annual bluegrass. The other key to maintaining creeping bentgrass is to keep the nitrogen level on the low side. Granted, the creeping bentgrass will not have the dark green color normally associated with it and you will not be removing the same amount of clippings you have in the past. However, you will be a lot more successful in maintaining a creeping bentgrass stand (Table 2).

The question you should ask yourself is, "Am I being paid by the amount of clippings I produce or is my job to maintain an excellent putting surface?" If the answer to the question is an excellent putting surface, the one thing that will detract from an excellent putting surface is thatch and graininess. Excess nitrogen is a great contributor to thatch and graininess. Following a low nitrogen management regime not only favors creeping bentgrass over annual bluegrass, but makes it easier to maintain a quality putting surface. The cultural management requirements for each species is given in Table 2.

As you saw in Table 1, each species has its own set of disease problems. If these problems are not taken care of, the turf will be severely thinned or, in

many cases, destroyed by these diseases. In the case of Kentucky bluegrass and creeping bentgrass, the dead areas most likely will be filled in by annual bluegrass, broadleaf weeds, or other weedy grasses. In the case of annual bluegrass, the annual bluegrass will undoubtedly replace itself in the fall or spring. However, the objective of a good superintendent is to maintain disease free turf whether it be on the greens, on the tees, or, on the higher budget courses, on the fairways. To do this, one needs to focus his cultural management efforts on turfgrass maintenance during the most stressful time of year. For the northern United States, this is the period between July 1 and August 31. God grows the grass until July 1 and he takes over again on August 31. During the other two months it is the golf course superintendents responsibility. This is what he has been hired for and what he should aim his cultural program at. Too often fertilizing, verticutting and coring are done when it is convenient to do them. However, these practices should be done at the time that they will make the turf the healthiest as it goes into the July 1 to August 31 stress period.

A good cultural program consists of heavy, deep verticutting in the early spring, following the breaking of dormancy and the initiation of new growth. A heavy, deep verticutting in early May will remove some of the mature plants, the result being the production of new juvenile plants which should be better able to survive the heat stress period. This should be followed by a double coring of the fairways between the 1st and 3rd week in June, depending upon your tournament schedule. These two corings should provide enough coring holes for vigorous deep root growth to make the annual bluegrass plants healthier and more vigorous going into the summer stress period. Finally, a good nitrogen program with emphasis on summer and fall nitrogen applications should be followed (Figure 1). The summer nitrogen will help reduce the severity of diseases such as anthracnose and dollar spot. The September application should help the plants recover from the summer stress period and begin to build up carbohydrates to get them through the remainder of the fall. The September application should be made early enough so the turf has a chance to harden-off before winter sets in. The late fall application should be made after vertical growth has ceased. At this point, the roots will remain alive for a 2 to 3 week period during which time they will be capable of taking the nitrogen up, storing it, giving the plants the nutrition they need to begin growth in the spring. Spring nitrogen applications often cause a flush of growth which usually results in excess top growth at the expense of root growth and, therefore, a less healthy plant going into the summer stress period.

Now that we have done everything we possibly can to culturally encourage annual bluegrass growth, it is time to take care of the pests of annual bluegrass. Figure 2 has a fungicide schedule for maintaining healthy annual bluegrass fairways or greens. Table 3 has a list of fungicides which are effective against these diseases. However, not all the fungicides listed are labelled for all the diseases and they should be used only as labelled. If you are still skeptical or if your golf club refuses to give you the money to treat either your fairway or greens, I suggest the following: in the case of fairways, take one fairway from tee to green and treat 1/2 of it with the fungicide program. I know from past experience that once the membership sees the difference in the turf quality, you will have no problem obtaining the funds for this program for all 18 holes the following year. If it is only the greens you are concerned with, you can accomplish the same result by treating 1/2 the greens with the program recommended here and the other 1/2 with your old program. Again you will not have any trouble the following season getting the extra money to treat all 18 greens.

Annual bluegrass does have one other major pest, the black ataenius beetle. There are many effective insecticides which can be used to control this problem. You should consult your local entomologist for further details.

I leave you with one final thought. The man who ceases to try anything new, who closes his mind to new ideas, is already dead although his heart may still beat. The golf course superintendent who closes his mind to new ideas, who is unwilling to try anything new is a superintendent in name only. To approach the greens committee with some new ideas on how to maintain healthy annual bluegrass, to improve the quality of their golf course is to be an alive, vibrant thinking superintendent. If, after demonstrating to them how they can have better, healthier turf, they are not willing to support you, then shame on them. But if you do not ask them for the money or if you are not even willing to try a new program on a small test area, then shame on you. Remember, when the fairways are green and the greens are healthy, the membership will show up to play golf. They will come into the clubhouse in a good mood and will be far more likely to stay for dinner and drinks. They will also be far more likely to tip the locker room boys and the help in the grill room and dining room. But if the fairways are thin and dead and if the greens are bare, they will stay home or find another golf course to play on. When they do show up, after a round on 'dead dirt,' they will either go home, or if they stay they will be in such a bad mood that they will take out their frustrations on the hired help in the clubhouse. It is not only the superintendent who benefits from a healthy golf course, but all of the other personnel as well.

I wish you all the best of luck in the up-coming year.

Table 1. Important Turfgrass Diseases on the 4 Major Cool Season Turfgrasses.

Kentucky Bluegrass	Creeping Bentgrass	Annual Bluegrass	Perennial Ryegrass
Melting out	Dollar spot	Dollar spot	Brown blight
Fusarium blight	Brown patch	Brown patch	Brown patch
Stripe smut	Pythium blight	Pythium blight	Pythium blight
Nigrospora patch	Leaf spot	Leat spot	Anthracnose
Yellow patch	Typhula blight	Anthracnose	Red Thread
Fusarium patch	Fusarium blight	Fusarium blight	Rust
		Typhyla blight	Typhyla blight

Table 2. Requirements for Competitive Survival of Cool Season Turfgrass.

	Kentucky Bluegrass	Creeping Bentgrass	Annual Bluegrass
Mowing height	1" - 2"	1/8" - 3/4"	1/8" - 3/4"
Irrigation	infrequent	infrequent	frequent
Nitrogen fertility requirement	1 - 4 lbs	1 1/2 lbs	3 - 4 lbs

Table 3. Fungicide Schedule for Annual Bluegrass Turfs.

June 7	Acti dione (TGF, RZ)
	Daconil 2787
	Chipco
July 1	Daconil 2787
July 10	Tersan 1991-(S)
	Fungo 50-(S)
	Cleary's 3336-(S)
	Pro turf Fert. + DSB-(S)
	Pro turf Fungicide 7-(S)
	Bayleton-(S)
August 1	Daconil 2787
August 10	Tersan 1991-(S)
	Fungo 50-(S)
	Pro turf Fungicide 7-(S)
	Cleary's 336-(S)
	Pro turf Fert. + DSB-S
	Bayleton-(S)
September 1	Daconil 2787
	Acti dione (TGF, RZ)
	Chipco 26019-S

Figure 1. Nitrogen Fertility Schedule for Annual Bluegrass.

	June 1	July 1	Aug. 1	Sept. 1	Oct.	Nov. 15
(lbs/1000 sq ft)						
Option I	1/2	1/2	1/2	1		1
Option II	1 1/2			1		1
		(Anthracnose)				
	(Dollar spot)					
		(Brown patch)				
					(Fusarium patch)	
					(Typhyla blight)	

Figure 2. Fungicide Schedule for Annual Bluegrass.

	June		July		August		September
	7	10	1	10	1	10	1
Fungicides:	S		NS	S	NS	S	NS
Diseases:			Anthracnose				
	Dollar spot						
			Brown patch				

S - Systemic Fungicide

NS - Non-systemic Fungicide