

## PICTURES FROM ATLANTA



Ed Fischer - Joe Williamson



A. J. Staudt - Joyce Krutilla - Bob Breen



Doc. Eshelman - Prayer Breakfast Speaker

## WINTER DAMAGE

Winter damage that is ordinarily associated with either ice or with free moisture on the surface of the soil is brought about by the inhibition of gas exchange in the soil and around the crowns of plants. The water and/or the ice seal the gases in the soil and the problem may be aggravated as the soil thaws and the ice melts inhibiting gas exchange. Under these conditions a buildup of toxic materials takes place resulting in direct kill of grass. It looks like this was a major factor in "winter kill" this spring with annual bluegrass as well as the direct low temperature kill of annual bluegrass in low or poorly drained places where the crowns became hydrated and frozen. On those locations on greens where samples smelled like sewer gas you may be fairly sure that a lot of damage was associated with the gas exchange problem. Those areas on greens with substantial kill but a soil sample had no foul odor probably were killed by direct low temperature where the crown hydration-freezing situation prevailed.

Before proceeding further it would probably be useful to review some of the characteristics of annual bluegrass. First, annual bluegrass or *Poa annua* is not an annual. It's really a biennial. It flowers and seeds prolifically in the spring and fall. These seeds germinate in the spring and also in the fall. Seeds that germinate in the fall establish new plants that overwinter as new plants while the seeds that germinate in the spring establish plants that may overwinter the next year. In both cases, very young plants and the older more mature plants are susceptible to "winter damage".

One of the other characteristics of annual bluegrass is that if it is growing in free moisture the crowns become hydrated and in this condition become very susceptible to direct low temperature damage. The temperatures really don't have to be very low to kill the grass under those conditions. Also, as a comparison, annual bluegrass will not tolerate submersion nearly as well or as long as the bentgrasses.

To summarize then, it looks like our annual bluegrass was killed in two ways. First, in some situations, it was killed from direct, low temperature stress of hydrated crowns and in other situations from the inhibition of gas exchange and build-up of toxic chemicals and gases in the root zone and around the crown while the surface of the soil was wet during the spring thaw.

Why did it happen this year? It all started last year with a warm dry fall extending into late November. Just prior to freeze-up last fall it rained, moistening the surface soil. The rain was followed by subfreezing temperatures and wet snow accumulation so the grass went into the winter under very moist conditions. In fact, the soil did not freeze as deeply as usual because of mild temperatures. In January a check showed that in many places there was only two or three inches of frost under the snow. Then the thunderstorms in February accentuated the moist situation at the soil surface under the snow. Many superintendents found from one to several inches of ice on the greens at that time. Some removed the ice and others didn't but in any case the situation was set up for direct low temperature kill or for inhibition of gas exchange and poisoning of the plants.

What can we do about it? There are several alternatives. One of them might be to do nothing. If nothing is done the annual bluegrass will be back in June. By the end of July people will probably forget the problems they faced this spring. Another alternative might be to either convert the greens to bentgrass or to increase the bentgrass population on the greens. One procedure would be to simply spike the greens several times

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and overseed either with seed spread by means of a drop spreader or by hydroseeding. Another alternative would be to aerify a green, scarify the surface with a vertical mower (which would also break up the plugs) and then to overseed. Some people might find that they would have better success if they overseeded first and then used the aerifier and the scarifier. Another procedure might be to use the aerification-scarification-overseeding operation plus a top dressing. If top dressing is used you would have to be very careful that you didn't bury the seed too deeply.

It is important to note that aerification will be particularly important in situations where kill was caused by gas exchange problems. Aerification will allow the toxic materials to dissipate faster and for the soil situation to improve rapidly.

If you select Penncross as the bentgrass that you want to establish on your greens, an overseeding rate of 1/2 pound of seed per 1,000 square feet is suggested. If Seaside bent grass or Emerald bentgrass is selected, you may want to use a pound or a pound and a half per 1,000 square feet. If the seed is to applied dry, there is little problem when you apply it, either before or after the aerification, scarification or spiking. However, if you intend to apply the seed wet, that is through your sprayer, then it would be best applied after you've completed preparation operations. For those superintendents who have irrigation available at this time, it might be useful for them to consider soaking their seed overnight or until the seed is swelled. By doing this you may gain several days in the germination process. However, you must be very careful that once the seed starts to germinate that it has a continuous supply of moisture until it becomes fairly well established.

You may want to consider using a half a pound of actual nitrogen per 1,000 square feet in the form of a natural organic fertilizer or a non-buring type fertilizer after overseeding to insure an adequate nutrient supply for the new developing seedlings. Of course, you will want to keep people off these overseeded greens during rainy or wet periods.

It may be useful for you to let the membership of your club know what you're trying to do before taking on the task of converting greens to bentgrass at this time. It probably would be useful to let them know what to expect and that the greens will green up later in the spring.

I would like also to suggest that you take pictures or slides and keep records of what you do and how the treatments work out. It may even be useful then for some monthly meeting or to set aside some time at the annual meeting to exchange information, to show slides of before and after and to discuss the successes and failures of all your operations.

Good luck and best wishes for a good year. If I can help, don't hesitate to call. Thank you.

**Bergerson Caswell Inc.**

### **CDGA GREEN SEMINAR**

We have an interesting agenda planned with Rees Jones, golf course architect, the featured speaker and the following topics:

- Re-Shaping of Greens & Re-Contouring Fairways
- Tri-Plex Mowing of Fairways
- Sand Top-Dressing of Greens
- Turf Research Update: Local & National
- Award Presentation to the Bull Sheet

We look forward to seeing you on April 5th, Tuesday, at Butterfield C.C., for the Chicago District Golf Assoc. annual Green Seminar.

**David L. Amory, Chairman  
CDGA Green Committee**

### **PRESAN DEMONSTRATION**

SITE - No. 4 Fairway - Bent, **Poa**, Ryegrass - 44,000 sq. ft.  
DATE OF APPLICATION - April 28, 1982  
TYPE OF APPLICATION - 400 gal. John Bean with 3/4 KLC  
108 Field Jet Nozzle

- Standing pressure 125 psi
- 60 gal. H<sub>2</sub>O per acre
- Nalco Trol Drift Retardant
- Watered in product immediately.

NOTE - No. 4 Fairway has a history of crabgrass, both smooth and silver. It is inadequately drained and has little to no air movement. This application was 100% effective in control of smooth crab and even though the rate was not conducive for control of silver crab the population decreased considerably. My plans at present is to treat this fairway again next year using a higher rate in hopes of inhibiting the rest of the silver crab.

I took the remaining pint of PRESAN and sprayed half of my No. 14 green (2860 sq. ft.) at 5.6 oz. per 1000 sq. ft. For the past 3 years the silver crab population has grown to be a bit of a problem. This year I dug out only about half a dozen plants. I will treat this green again next year and hope for 100% control.

**D. L. Godke, Business Manager  
Speciality Agricultural Products  
Mallinckrodt, Inc.**

### **DUOSAN DEMONSTRATION**

SITE - Tees - Bent, **Poa** - 55,000 sq. ft.  
DATES OF APPLICATION - June 4, 1982; June 22, 1982;  
July 6, 1982

- RATE OF APPLICATION - 3 oz. per 1000 sq. ft.  
TYPE OF APPLICATION - 400 gal. John Bean Sprayer
- Hand gun
  - 5½ gal. H<sub>2</sub>O per 1000 sq. ft.
  - Standing pressure 125 psi

NOTE - Initial application was to be made during the week of May 3rd but due to weather conditions unfavorable for disease development first application was not made until June 4th. At this time there was a slight infestation of leaf spot on bentgrasses and some dollar spot. This application and a drying, warming weather trend checked the leaf spot and showed good control of dollar spot. June 22nd application once again showed good results on dollar spot but on June 29th activity began, especially on tees with a higher percentage of bentgrass which, of course, have a bit more thatch build-up. Even though the disease was spreading we waited until July 6th for the next application. At this time we had sprayed fairways for dollar spot control with a combination of 1991 and Daconil Flowable and saw excellent results. The July 6th application seemed to check the spread of dollar spot but had no curative action on the disease that was present. On July 12th the disease again began to spread and on July 14th we made an application of Chipco 26019 at 1½ oz. per 1000 sq. ft. Even though I have used very little systemics on my tees in the past 6 years I must conclude that I have a resistant strain of dollar spot. From my findings, I feel that I would use Dousan in my overall pesticide program but isolate its use to Spring and Fall applications when I can get good leaf spot control and some dollar spot control.

**D. L. Godke, Business Manager  
Speciality Agricultural Products  
Mallinckrodt, Inc.**