

## Rain Helps Nitrogen and Makes Grass Green

By: Ed Perry, Stanislaus County Farm Advisor

I came across the following interesting article entitled "Does Rain Green Up Grass?", in the Spring 1996 issue of a newsletter entitled *The Curious Gardener*. I thought you might enjoy reading about this source of "natural" lawn fertilizer.

Grass seems greener after a rain, but is it just the addition of water in the soil?

Actually, it is nitrogen that causes the grass to look greener. There is about 80 percent nitrogen as a gas in our atmosphere, but this is a form that plants cannot readily use. When it rains, oxides of nitrogen are dissolved in the rainwater, which then goes into the soil. Here the nitrogen is "fixed" or made into an ammonia or nitrate form usable by plants, usually by bacteria that live in the soil. Bacteria involved in this process are Azotobacter, Clostridium and Rhizobium, as well as blue-green algae.

The bacteria change the atmospheric nitrogen into nitrate, ammonia or ammonium.

The ammonia and ammonium are also converted to nitrate in the soil by still other bacteria, such as Nitrosomonas and Nitrobacter. Thus these complicated biological processes change atmospheric nitrogen into a form that plants can take up with the soil water and use in Chlorophyll production, which causes an increase in the green color that you see in the grass.

This natural process is simulated when you apply fertilizer to turf to make it greener. To make fertilizers, manufacturers take atmospheric gas and use industrial processes to make it into forms that are available to plants, such as urea or ammonium nitrate.

Some of these nitrogen forms are readily available for use by the plant, while others are converted into nitrate forms for plant use by soil bacteria.

## Research Update

By: Wayne Lindelof, CGCS

As reported in last month's "Thru The Green," an experimental green has been developed at Crystal Springs Golf Course, in cooperation with the USGA, GCSAA, NTEP and University of California Cooperative Extension. The site at Crystal Springs represents one of thirty across the USA. The USGA spec green was planted in mid-September with 18 bentgrass varieties.

Weather permitting, the practice green is scheduled to open for

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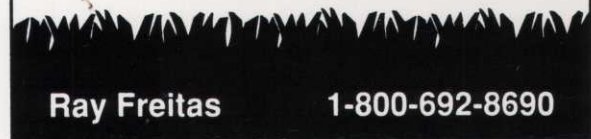
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## Davies Report (Cont'd)

and golf course superintendents. It is called Investing in the Beauty of Golf'

- Discussion on dual membership and the paperwork issues it has brought on (verification, cash handling, applications).
- Fiscal plans and long term implementation of dues increase policy. Margin is currently budgeted for \$300,000. 22% of budget from dues (up from 17% prior to dues increase).
- Regional seminar rebates will probably be discontinued. Attendance varies greatly with topic and the program is not achieving its original goal of promoting the program. Volunteer efforts will still be acknowledged through comp registrations.
- GCSAA Committee volunteers will be screened for Chapter involvement. GCSAA is placing a premium on those that have served the local chapter first. Verification by the Chapter will be required on all applications. Currently half of those seeking committees are turned away. Deadline to GCSAA for verified applications is 10/31/97. Applications will be available at the joint meeting.
- Discussion on the Etonic Speakers program. Deadline for sign-up is September 30.
- GCSAA/Audubon for schools program has seen less than desirable results. Only 80 schools nationwide. Incentive program will pay the \$100 initiation fee for the next 25 involvements.
- Brainstorming on the needs of the Chapters. That information is being printed for distribution. My comment was find ways to reduce the paperwork requirement for the chapters (online forms, etc.).

## Grass Carp Bill Signed By Governor Wilson

By: *Jim Husting, CGCS*

On September 29, 1997, Senate Bill 472 was signed by Governor Pete Wilson. This bill will allow the use of triploid (sterile) grass carp in approved golf course ponds throughout California, subject to a Department of Fish and Game (DFG) permit. The CGCSA in conjunction with their lobbyist George Steffes worked hard and long to get this bill passed this year. After countless meetings and political compromises between the CGCSA and the DFG a bill has come through that I feel we can live with — SB 472.

1. Permits the expansion of the use of the sterile grass carp, subject to the DFG finding that their use may be expanded, as follows:

- (a) beginning January 1, 1999, to the counties of San Diego, Orange, Los Angeles, Kern, Ventura and Santa Barbara
  - (b) beginning January 1, 2000 statewide.
2. Requires that if the DFG determines that the use of sterile grass carp should not be expanded in either year, that it shall reconsider the question the following year.
  3. Requires that the DFG's findings be based on documented and verifiable evidence.
  4. Allows the DFG to limit the number of permits issued annually to 150. The intent of

this provision is to keep the administrative costs of the program, and consequently the fees, at current levels.

5. Allows the DFG to suspend the permits, either locally or state wide, if there is evidence that the sterile grass carp have escaped from authorized waters or are threatening other native fish and wildlife.

Sterile grass carp provide a non-herbicide, non-mechanical means to control unwanted aquatic weeds and vegetation. The USDA has found California's current program authorizing the use of over 70,000 sterile grass carp in the Imperial and Coachella Valleys since 1985 to be an effective, cost efficient and environmentally sound solution to the problem of unwanted aquatic vegetation, particularly hydrilla.

The California Golf Course Superintendents Association has long understood the need for non-chemical alternative methods of pest control on California golf courses. The Association's Integrated Pest Management program, which aggressively seeks to incorporate alternative methods to chemical usage on California's golf courses, is a national industry standard. SB 472 will make it a better program.

## Research Update (Cont'd)

public use sometime after the first of the year. Research Coordinator, Dr. Ali Harivandi, stated the experiment will run for 3 to 5 years and he hopes to conduct field days at the site in the future.

Also under way is research which will evaluate the use of hard fescue from sod. Hard fescue is an excellent turfgrass selection for non-mowed areas, however establishment from sod can be a challenge, often resulting in significant competition from weeds.

The research project, coordinated by Dr. Ali Harivandi, will look at the use of sod as a means of establishment. Hard fescue sod which was grown at The Sod Farm in Morgan Hill, was harvested in late September and planted at the Research Field Station in Santa Clara. The ability of the sod to take root will be carefully evaluated.

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