

Turf events in New York

THE FOLLOWING UPCOMING EVENTS of interest to turf managers in New York and surrounding areas are scheduled:

■ Cornell Turfgrass Field Day, July 1

Pine Island, NY, NY State Turf Assn., (800) 873-TURF

Research updates on water management, annual grass weed control in new seedings, turf renovation, and other topics—plus 125 varieties of Kentucky bluegrass shown in high maintenance demonstration trial. The fee is \$20 if you register by June 24, or \$25 on-site.

■ Turfgrass Management Seminar, July 30

Saratoga Sod Farm, NY State Turf Assn., Stillwater, NY, (800) 873-TURF

Talks on installation and maintenance of sod on athletic fields, the non-target effect of fungicides, and new technology for applying insecticides and other materials below the soil surface. Dr. Eric Nelson, *Turf Grass Trends* Associate Editor, will discuss late July turfgrass diseases and the latest—use of aerial photography as a diagnostic tool for golf course greens. The fee is \$25 for members of sponsoring organizations and \$32 for non-members.

■ Turfgrass Field Diagnostic Course for Golf Course Managers, Aug. 4-6

Cornell University, Ithaca, NY, J. Gruttadaurio (607) 255-1792

■ Grassland Field Day & Equip. Show, Aug. 12

Grassland Equip. Corp., Latham, NY, (518) 785-5841

Texas bluegrass has possibilities

CROSSES BETWEEN TEXAS BLUEGRASS (*Poa arachnifera*) and Kentucky bluegrasses from the bluegrass program at Rutgers University have successfully withstood 100 degree temperatures. The tests may lead to some interesting new introductions.

Buffalograss has limitations

RESEARCHERS LOOKING FOR A BETTER, low input turf have found several disappointing limitations to buffalograss. It cannot be used in shady areas, and it may be difficult to grow in areas where it does not occur naturally. Interested turf managers should contact their local extension agent to see if they are aware of any local test results, or simply plant a small test patch, and see for yourself how well it does in your area. ■

Biotechnology

The future of the turfgrass industry

by Dr. Eric B. Nelson



WHEN MOST PEOPLE hear the word "biotechnology", they immediately think of ivory-tower scientists tinkering in their laboratories, creating various types of genetically-altered mutant plants or animals capable of mass destruction and world conquest. This vision of biotechnology is perhaps the furthest from reality.

Over the past decade, opponents of these new biotechnologies have attempted to convince the public of their dangers, resorting to all kinds of scare tactics, and, in some cases, citing unusual examples of how some of these technologies could end human life as we know it. On the other hand, defenders of these biotechnologies (generally scientists like myself) have tried to convince the unenlightened and the ill-informed of the power by which various biotechnologies can benefit mankind by protecting our national agricultural enterprises and facilitating the clean-up of our polluted planet.

So what is biotechnology anyway? In the broadest sense, biotechnology is any form of applied biology, ranging from plant breeding and the use of microorganisms for the biological control of plant pests and diseases to biological waste treatment and the production of human medicines and industrial biochemicals. You probably are already familiar with several products of biotechnology. For example, the *Bacillus thuringiensis* or "BT" biological insecticides for use on turfgrasses and other agriculturally-important crops, are products of biotechnology. They are preparations of microorganisms that produce an insecticidal chemical. Likewise, the use of endophyte-infected ryegrasses and fescues resistant to a number of insect pests and diseases, are products of biotechnology. Additionally, the treatment of municipal solid wastes and waste water also relies on specific microorganisms to degrade pollutants and organic matter and aid in the purification of municipal water supplies. The latter is probably one of the older biotechnologies known.

Whereas the above-mentioned biotechnologies have provided novel and, in some cases, uniquely effective ways of dealing with agricultural and industrial problems, the biotechnologies with the greatest potential to change the way in which we approach plant production and plant protection are those based on developments in molecular biology—particularly in the field of plant and microbial genetics. Many of these advances have arisen from a discovery—nearly 20 years ago—that DNA (deoxyribonucleic acid), the basic genetic material within every living cell, could be transferred artificially to create new "hybrid" plants, animals, and microorganisms. DNA can be transferred from microorganisms to plants, from plants to microorganisms, microorganisms to