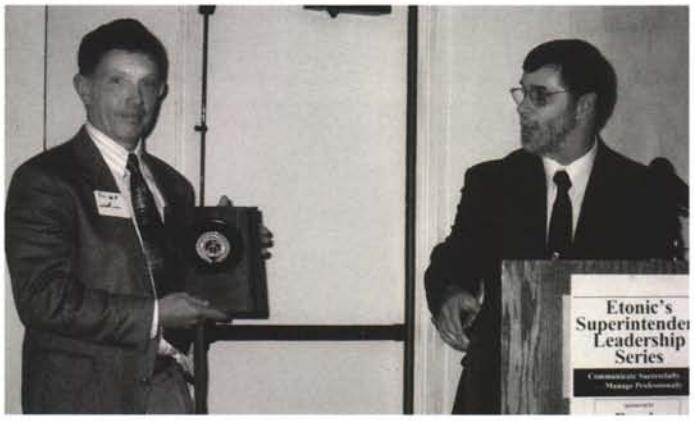

James Hall was introduced by Mike Kactro, who presented him with his 25 year member plaque.

Mark Kienert received his 25 year member plaque.

revenue to decrease and the business therefore suffers. The response to these situations is to cut the budget and hold the line on spending, cut the number of workers and expect the manager to do more with less. This all produces more stress, less job security and job satisfaction.

In order for a manager to "raise the bar of productivity" above a level where the worker just gets by, he must improve the worker's performance in four areas: 1) the quality of work being done, 2) the quantity of work being done, 3) the efficiency of the work being done and 4) the cost of the work being done. Basically, you improve productivity by improving employee effectiveness.

Sweda said that "effectiveness" was essentially doing the RIGHT things, doing them the RIGHT way and in the RIGHT amount of time. He also stated that unfortunately, the odds are in favor of ineffectiveness by a factor of seven to one.

Mr. Sweda went on to explain that the best way of accomplishing this goal is to have a system that improves productivity. The value of a system is that it can be consistent, it becomes habit, it can be adaptable to different situations and it is teachable to others.

Sweda's System of Managing that Improves Productivity was based on setting standards of what the finished product should be, regarding quality, quantity and efficiency. This activity that he called ***Establishing*** is needed because of the three forces that are working against you: 1) the individual left on his own would establish a standard lower than acceptable, 2) the group as a whole tends toward average levels or mediocrity, and 3) unofficial leaders of the group also have different standards than you would have.

The rest of the system involves ***communicating*** the standards, ***addressing*** deficiencies before they get out of hand, ***instructing*** or training and showing employees what you want, ***counseling*** which is a more serious way of addressing the deficiencies or problems, which may include probation or other disciplinary actions, ***replacing*** if counseling doesn't work, and finally ***recruiting*** which involves selling the job or business and its values to prospective employees.

Sweda claims that even with this system in place your success is not guaranteed.You still need the employee's best effort; that you can only get if they give it to you.

This "discretionary effort" is the difference between the maximun effort and care an employee brings to the job and the minimum amount required to stay on the job. Sweda claims that you also need a System of Motivating that Maximizes Productivity.

The system involves the following concepts: 1) ***Connecting***, which includes formal orientation to the job and developing both physical and mental awareness and pride in the business or company. 2) ***Exchanging***, which involves learning what the employee's expectations of the job and company are. 3) ***Developing***, which is training of the staff for their betterment on the job and in life. 4) ***Empowering*** that enables them to do and enjoy their jobs better. 5) ***Recognizing***, which rewards them for doing a good job, and 6) ***Mentoring***, which Sweda explained, is akin to parenting.

The combination of all of these is what makes a true leader. Sweda said that there are two kinds of leaders. One kind takes you places where he wants you to go, while the more beneficial type of leader takes the followers to places they want to go.

In conclusion, Mr. Sweda stated that getting maximum performance from the people you manage is a difficult challenge but that the rewards that are possible for those who do suggest that it is in your best interest to get better at this aspect of your job. The key is to be willing to work at it.

Dr. Stier's presentation about the Turfgrass Industry Survey included background on the roots of this type of survey and what it can do to ben-

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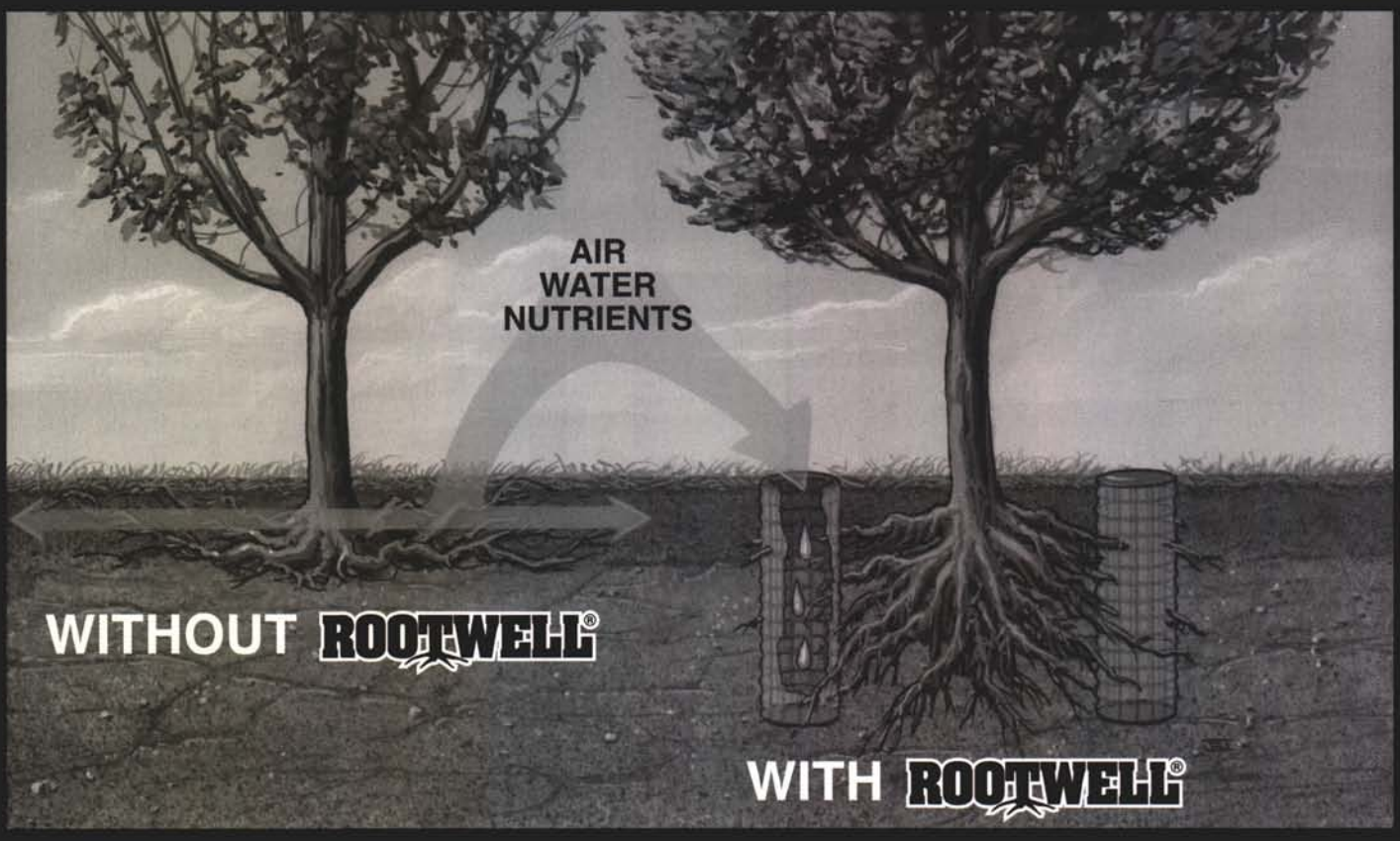

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efit the industry as a whole. He explained his futile attempts to get the survey process going due to lack of interest by the Wisconsin Agricultural Statistics Service which considered the turfgrass industry in Wisconsin to be too small to justify a survey. He finally got lucky when a phone call reached a person who had experience with turfgrass surveys in other states and was willing to help out. In no time at all the process was under way and is reaching the point now that you should have received the two part survey sometime in late February.

It is important because the results of this survey should reveal the enormous size and economic impact of the turfgrass industry in the state and be a tool for receiving both public and university support and funding for continued research, new processes and legislative efforts. Dr. Stier also explained how this survey is being funded and that the total cost would be near $100,000. The results are expected to be tabulated and may be available as early as next years Turf Expo in January.

Ray Davies of the GCSAA gave an informational presentation about the GCSAA's Professional Development Initiative. The mission of the PDI is to improve the competencies of superintendents and to improve playing conditions resulting in greater enjoyment of the game for all that are involved.

Mr. Davies discussed the history of the PDI and the basic concepts that went into its development. The bottom line of the PDI is to create a minimum competency level that employers can expect from a superintendent with a Class A rating.

At this point in time a Class A status only indicates that you are currently and have been a superintendent for three years and that you have paid your $250 dues to the GCSAA. The program will be a self-assessment program and will provide means to improve your competencies in areas where you may be weak. A booklet was handed out that adequately explains all the parts of the PDI. The booklet is available from the GCSAA and the GCSAA web site also has a section explaining the PDI and its components. Part of Mr. Davies objective for this presentation was to gain feedback from members and try to answer any questions that we as members may have about the PDI. Postcards were passed out for submitting questions and concerns to the GCSAA and Mr. Davies also stated that any questions, concerns or suggestions could also be e-mailed to the GCSAA. Mr. Davies stated that the GCSAA will be conveying information about the PDI through GCM magazine and Newsline, and the committee would be reviewing all the feedback gained from these presentations to chapters and other information submitted over the next few months.

Hopefully, the program would be at a stage that it could be voted on by members at next year's GCSAA Conference and Show. There will be a pilot test of the program from March of 2001 to March of 2002 if passed. The program is scheduled for implementation in July of 2002.

Mr. Davies stressed that this presentation was not a "sales job" and stated that the committee will change the program according to what the members want. He said they want a program that will benefit and be acceptable to as many people as possible.

The association's business meeting moved along quickly with officer and director reports. President Pinkerton explained a voluntary donation check-off that will appear on the monthly meeting registration slips for the coming year to benefit the Turf Disease Diagnostic Lab (TDDL) at the O.J. Noer Center. Hopefully we can help keep this beneficial service available to all of us. The 2000 budget was presented and a vote was taken regarding the approval of the scholarship and research disbursements for this year.

Newly elected Board Member Mike Kactro presented 25 year awards to the following members: James Hall, Jerry Kershasky, Mark Kienert, James Shaw, and Bill Roberts.

The next meeting is scheduled for April 24th at Evergreen C.C. in Elkhorn, WI. Hope to see you there!

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What is DNA?

By Dr. Geunhwa Jung, *Department of Plant Pathology, University of Wisconsin-Madison*

In recent years, many biotechnology terms (DNA, sequence, cloning, transformation, transgenic material, molecular marker, genome, and biotechnology, for example) frequently appear in newspapers and non-scientific magazines, which most people can routinely access and subscribe. Millions of dollars have been spent and are still being invested into plant and animal genome projects (sequencing of whole chromosomes in human, Arabidopsis, and rice, etc.). Since we as taxpayers are contributing money for the support of these gigantic research projects, we should get an idea of what is being done and how we will benefit. When we are facing new topics for the first time, we tend to ignore them rather than spend the time to understand them. Perhaps one thinks that it is just too hard or too much to learn. However, once we pull up our chair to the desk and start to read the text sentence by sentence, then we begin to realize that the content is not so difficult. Instead, the subject is fun and arouses interest. For example, a person who has never played golf in his/her life, just like myself, does not know what kind of fun or joy people experience by playing golf. Once that person has a chance to play golf in any situation, the person's attitude toward golfing should change to a positive one.

What is DNA? DNA is an abbreviation for deoxyribonucleic acid. Perhaps many of you may have heard the term DNA, but not as many understand it. The DNA molecule is in the form of a double helix. Some DNAs are very long, and some are short, but all DNA is very tiny. Relatively large amounts of DNA can be found in the cells of living organisms packaged in a very efficient way. DNA contains the codes for an enormous variety of genes. And genes are the pieces of information, which all living organisms have inside them, enabling them to function, maintain life and reproduce, thereby passing on the genetic information to next generation.

If we want to make or reproduce the same house in multiple copies, all we need is a description or a blueprint of the original house. With the necessary raw materials and the directions/description, we could build the exact same house without any difficulty. Of course, someone else could produce the same house as well, if we gave him a copy of the description of the house. The description for building the house is analogous to the DNA found in living things (microorganisms, plants, and animals). Like the detailed description for building the house, DNA contains a coded description of the organism and is responsible for its capacity to reproduce. Living organisms, unlike the description of the house, do not usually make exact copies of themselves. If that was the case, there would be no diversity and life as we know it would not exist. Living organisms make variant copies of themselves. This is possible because of the nature of DNA.

By the mid 1800's, most biologists accepted the view that all plants and animals consisted of cells. New cells were produced from old cells through cell division. Frederick Miescher who was the son of a well-known physician in Basel, Switzerland unexpectedly discovered DNA. In 1869 he had gone to Tubingen in Germany to study the chemistry of white blood cells. He used pus obtained from postoperative bandages, as a source of the cells. When he added weak hydrochloric acid to the pus he obtained pure nuclei. When he added alkali and then acid to the nuclei a gray precipitate, or solid, formed. The precipitate was unlike any of the known

organic substances. Because it came from the nucleus, Miescher called it nuclein. Today it is called DNA. Shortly after Miescher's discovery, new staining techniques were developed which revealed band-like structures in the nucleus of cells. In 1879 Walter Flemming introduced the term chromatin (Chroma:Greek for color) to describe the intensely stained material in the nucleus. In 1881 E. Zacharia performed an experiment with chromatin by reacting it with acid and alkali in the same way as Meischer's nuclein. He concluded that nuclein and chromatin were in fact the same material. Today, the chromatin material used by Flemming is called chromosomes. Chromosomes carry genes in a linear fashion, which are the basis of heredity.

While scientists were not sure how the chromatin (chromosomes) was passed on to the next generation, scientists studying fertilization made the connection between chromatin and heredity in 1870's. Two scientists, Hermann Fol in Switzerland and Oskar Hertwig in Berlin, independently showed the connection between chromatin and heredity by observing (using the light microscope) that the sperm penetrates the egg, and that the nuclei of the sperm and the egg fuse. Edouard Van Beneden, studying the threadworm Ascaris (a parasite of horses) noted that the sperm contributed the same number of chromosomes as the egg to the developing embryo. He also discovered meiosis, the halving of the number of chromosomes in the germ cells (the egg and the sperm). It was Flemming who observed cells dividing and saw chromosomes replicating. He concluded that chromosomes were a source of continuity from one generation to the next. So by the 1890's scientists had come to have a clear idea of the nature of fertilization, and were even declaring that DNA (Meischer's nuclein) was the basis of heredity.

Modern genetics begin with Gregor Mendel's famous experiments with garden peas in the 1860's. Mendel had chosen peas that had certain pure traits, which when bred, always give the same traits. Pea is a self-pollinated crop (the transfer of pollen to stigma within the same flower). Plants derived from vegetative propagation, or from apomictic or self-pollinated species can be homogeneous at the genetic level, exhibiting little genetic difference. Alternatively, cultivars with a cross-pollinating reproductive system can be genetically heterogeneous. Most turfgrass, except Kentucky bluegrass, has a reproductive system of cross-pollinated seeded species. Kentucky bluegrass had an apomixis, which is forming the seed by an asexual method of reproduction, basically mimicking sexual reproduction in that the seed develops in the ovule of the flower, but without union of the sperm and egg. Mendel had plants that always produced yellow

seeds, and others that always produced green seeds. When he manually made crosses by rubbing pollens from the green plant onto the stigma of the yellow plant, all the progeny were yellow-seed bearing plants. Mendel called the yellow trait Dominant, and the green trait Recessive. He argued that the progeny of these first generation crosses had each received an equal genetic contribution from each parent, but only the dominant yellow trait was manifested. When he crossed these first generation hybrids with each other he found that 75% of the progeny were yellow and 25% were green, confirming his hypothesis that the green "gene" (he didn't use this term, however) had been there all the time. This is the story of how the science of the genetics was developed.

In the early part of the 20th century, scientists discovered the Mendelian 'factors' controlling inheritance, which we now call genes. They discovered these "factors" to be organized in linear order just like beads on a string (cytogenetically defined structures called chromosome). Since then, concepts of genes linearly placed on chromosome have been tremendously utilized in many areas of the biological sciences. For many years the principles of genetics based on this concept have been applied to unveil biological mechanisms such as the interaction of pathogen and host for causing disease, pathogenecity, and to improve crop varieties. During the last decade one of the applications of the concept of a linear pattern of genes, is the advent of DNA marker technology. Today DNA marker technology has become an essential tool in all areas of research of living organisms.

Over a last decade biotechnology has grown rapidly and begun to play a very important role in agriculture because of its ability to modify microorganisms, plants, animals, and agricultural processes. The definition of biotechnology may be described as "any technique that uses living organisms, or substances from those organisms, to make or modify a product, to improve plants or animals, to develop micro-organisms for specific uses." In agriculture, biotechnology has found applications in cell and tissue culture, for rapid propagation of plant species; in diagnosis, for detecting plant pests and diseases based on the use of antibodies and DNA probes; and in genetic engineering of plant species, to introduce new traits (disease resistance genes) and in facilitating conventional plant breeding programs using molecular markers. How about any progress in turfgrass research? Of course, turfgrass research has been changed by rapid progress in the above categories. In particular, researchers have favored the development of transgenic plants inserted with useful genes and the application of DNA marker technology in recent years.

In the breeding world, one of the main objectives of plant breeders is to improve existing cultivars, which are deficient in one or more important traits (better quality, disease resistance, and drought tolerance, for example), by crossing such cultivars with lines that possess the desired trait. A conventional disease resistant breeding program thus involves crossing between a resistant cultivar with undesirable traits and a susceptible elite cultivar. Then the particular progenies (called recombinants), with combination of all desirable traits from the elite cultivar with disease resistant trait from the resistant cultivar, need to be selected from among a series of progenies, which have a combination of different traits contributed from both parents. Such a procedure is laborious and time consuming, involving several crosses, several generations, and careful phenotypic selection followed by inoculation with pathogen isolates. With the advent of DNA markers (specific locations on a chromosome, which serve as landmarks for genetic studies), several types of DNA markers and molecular breeding strategies are now available to plant breeders and geneticists in crops, including turfgrass, helping them to overcome many of the problems faced with conventional breeding.

Then, what are the practical applications of DNA marker technology for research in areas of turfgrass pathology? Stay tuned for the next issue of the Grass Roots.

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TDDL No Longer, Now it's the TDL

By Jeff Gregos, *Department of Plant Pathology, University of Wiscsonsin-Madison*

For over three years I have been writing articles within the TDDL section of the Grass Roots, but this article will be the last. Before you jump to conclusions, corporate America has not downsized us, rather we have taken the next step in diagnosing all your turfgrass related problems. On January 27th members of the Turfgrass Team met and came to the agreement to consolidate all turfgrass diagnostic services into one lab. Starting this season all turf samples (disease, insects, and weeds) will be processed at the newly formed Turfgrass Diagnostic Lab (TDL)

The TDL, as was the TDDL, is a revolutionary concept that separates it from other diagnostic labs. Most diagnostic labs across the country, and within our University, deal with a broad range of crops. These labs are very qualified to diagnose problems, but some of the time the problem submitted is actually caused by something other than what it was submitted for. For example, what appears to be a disease problem is actually caused by an insect or cultural problem. This is when it is convenient to have people familiar with all aspects of the crop on the receiving end. In the past several years at the TDDL the most commonly diagnosed problems are abiotic. If you were not familiar with the crop, many questions could go unanswered.

In light of the many differences found in turf (perennial crop, traffic, etc.), the Turfgrass Team decided it is best to remove any middlemen. For example, if you have a sinus infection, you may first go to your general practitioner. If he is unable to solve your problem, he will probably send you to an ear, nose and throat specialist. This is a time consuming process, of which you have very little when dealing with many turf problems. With specialists on board from each discipline, the TDL should be able to serve all your diagnostic needs, one stop shopping-if you will. Dr. John Stier will be assisting with weed and physiology related problems and Dr. Chris Williamson would assist with entomological identification.

Another important aspect that will be tied into the lab is educational experience for graduate students. Over the summer months graduate students will be assisting in the sample diagnosis. When the Turfgrass Team met in January, we agreed that one thing lacking in graduate programs is practical experience. Many of the graduate students will be diagnosing problems of turf managers someday. It is important for them to gain an understanding of how to evaluate a sample as well as learn clientele relations.

So as you go to submit a turf sample this year, remember that there is only one address to send it to: TDL, 3101 Highway M, Verona WI 53593. We look forward to not hearing from you, but if we do, we are ready to help with any turfgrass problem you might have.

Hot Dates

By Tom Schwab, *O.J. Noer Turfgrass Research and Education Facility, University of Wisconsin-Madison*

There are three hot dates for you to put on your calendar. These aren't the hot dates that some of the people I work around are always unsuccessfully looking for. These are dates for advancing your profession. Turfgrass education is the scope for two of the events. The other event is for recreation and raising funds on behalf of the industry that we work so dynamically in. The Wisconsin Turfgrass Association sponsors all three events - Summer Field Day, Turfgrass and Greenscape EXPO, and Golf Fundraiser. They are all great events for you and the industry.

The Golf Fundraiser is the first event being held this year, scheduled for **June 5th**. Traditionally this has been a fall event but since it's going to be held in the early summer, you should start making plans immediately to attend. Registration forms should have been in your mailbox in April. The Summer Field Day is also going to be held early this year on **Tuesday, August 8th**. Previously this event was always held later in August. It was moved earlier because summer staff was leaving late in August making it harder for people to get away. The third event is the Turfgrass and Greenscape EXPO, which will be held **January 9th and 10th, 2001**. If you have questions about any of these events then please call Audra, WTA administrative secretary, at 608-845-6536.

GOLF FUNDRAISER - JUNE 5TH

Pat Shaw will be the Golf Fundraiser host for this year. His course, The Bog, will provide an extraordinary venue for participants that shouldn't be missed. The day will be all-inclusive with lunch, golf, practice range, cart, prizes, and hors d'oeuvres. The fundraiser was cancelled last year because of low registration. Let's turn it around this year! Bring a group of friends and/or become a hole sponsor. Everyone will be impressed with this jewel of a golf course and at the same time will help support turf research for the future of the game. Call Audra if you need more details.

SUMMER FIELD DAY - AUGUST 8TH

The next date to remember is for Summer Field Day. The planning committee started meeting back in March because even though the golf season has just begun, we're always surprised how quickly August comes around. There will be many parts of Field Day that you are familiar with - the morning research tour, the afternoon one-on-one with researchers, the huge trade show and demonstrations, and the fabulous lunch. Other components will be new - Bruce Schweiger is dreaming up games for your entertainment, the silent auction will be larger and easier to make bids, and there will be more education. It is a challenge to top the previous year's show but the plan-

Field Day has really become the happening event of the summer.