



Turfgrass Industry Loses a Pioneer Turfgrass Pathologist

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Dr. Houston B. Couch, turfgrass pathologist at Virginia Tech, passed away on Sunday, September 12th at the age of 80. I am sure that most Wisconsin golf course superintendents are familiar with Dr. Couch, either through the talks that he gave throughout the state and country, the journal and trade magazine article he wrote, or the two books he has written about turfgrass diseases. It is very difficult to summarize the accomplishments and personality of a person such as Dr. Couch in just a few pages of text, but I will try to do justice to the impact that Dr. Couch had on the turfgrass industry and the people who knew him personally. Most of the information included in this article is from my personal experience with Dr. Couch when I was his graduate student, and from an interview of Dr. Couch by Dr. David Chalmers in 2001.

Houston B. Couch was born on July 1, 1924 in Estill Springs, Tennessee. He lived on the family farm, where his father was a sharecropper, until around the time of the Great Depression. At this time, the family moved briefly to Chicago before proceeding to Flint, Michigan where Houston's father found work as a machinist for General Motors.

Dr. Couch completed high school in Michigan and was promptly selected in the first US military draft that included 18-year olds. He was assigned to the 517th Parachute Regimental Combat Team known as the Battling Buzzards as a paratrooper (Fig. 1). Dr. Couch and his fellow soldiers in the 517th began their campaign in Italy in June of 1944. Later that year, he was involved in an early morning jump into Southern France and proceeded to the Ardennes where he fought in

the Battle of the Bulge during the bitterly cold winter of 1944-45. In January of 1945, Dr. Couch was wounded during battle in Belgium and received a Purple Heart for his injuries. He returned home in September of 1945 and was discharged honorably in October of the same year.

Dr. Couch would often recount stories of the time he spent in Georgia training for the war and in Europe as a soldier. These stories were often about the hard conditioning that they had to go through while training to be paratroopers and the colorful people he met along the way. It was evident from the majority of his stories that he and his fellow soldiers were typical teenagers who got into a lot of mischief. When it came to the war, he would speak of fellow soldiers that he knew well and the hardships including hunger, lack of sleep, long marches, and the cold. He rarely spoke in detail of the brutality that he had witnessed as a soldier and would become visibly shaken when talking about the "good buddies" that he had lost in the war.

Soon after returning from the war, Dr. Couch met Billie Spencer and following a two-week courtship, the two were married. Houston moved to Tennessee where he enrolled at Tennessee Tech as an agronomy major and biology minor. His first interest in plant diseases was sparked by his plant pathology teacher, Bob Edwards. Upon his graduation in 1950, Dr. Couch decided to continue his plant pathology education as a Ph.D. student at the University of California at Davis. His advisor was R.G. Grogan who graduated from the Plant Pathology Department at the University of Wisconsin under J.C. Walker. As a student of Grogan, Houston studied vegetable diseases, and concentrated his efforts on his dissertation involving lettuce anthracnose and the seed transmission of lettuce mosaic virus. In 1954, Dr. Couch graduated and began searching for a job in his field during a time that had very few open positions in plant pathology.

Dr. Couch began his professional plant pathology career in 1954 when he accepted a forage pathologist position at Penn State. After a couple years of working on forage plants, Dr. Couch started doing side experiments on rust of Merion Kentucky bluegrass. One particular day, he showed his rust control research at a field day where he thanked everyone for stopping by to look at his plots. A golf course superintendent named Marshall Farnham replied, "Get one thing straight young man, we thank you for your efforts, you don't thank us. Anything you need, you give us a call." This was the defining moment in Dr. Couch's career where he realized how sup-



Figure 1. Logo of the 517th Parachute Regimental Combat Team known as the Battling Buzzards.

Latest Developments In Turfgrass Disease Research

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During the past decade, all along the front of turfgrass production technical knowledge has increased at a rapid rate. The range of selection of types of fertilizers is much broader than it was ten years ago. Weed killers are more numerous and have higher degrees of selectivity for unwanted grass species. Diseases and insects that once were considered "necessary evils" are now easily brought under control. As the result, management specialists of today can produce grass with a far greater assurance of constancy of high quality than ever before.

The purpose of this paper is to highlight some of the more recent developments in turfgrass disease research, and to relate these findings to disease control in the field.

Chemical Control of Turfgrass Diseases

At the turn of the century, Bordeaux Mixture (copper sulfate + lime) was coming into general use in the United States for control of many plant diseases. By the end of World War I, this combination had found its way into some golf course management programs. Used primarily as a dust, more than one hapless golf course superintendent discovered too late that while the material was a fairly good fungicide, Bordeaux was more



The discovery that Thiram was an effective fungicide for control of grass diseases was the first real breakthrough as far as disease control without grass burning was concerned. It was soon found that not only did this material have a fairly wide plant safety range; but it was also effective in reducing the phytotoxicity of other fungicidal materials. Combinations of Thiram-mercurous chloride, Thiram-Semesen, etc., became increasingly popular. The use of these combinations marks the beginnings of high quality turfgrass disease control. Today, Thiram is still the most popular basic ingredient in commercially prepared broad spectrum fungicides.

program, Captan, Phaltan, Maneb, Zineb, and Dyrene have been added to the basic list. At present, some 14 chemical compounds are employed either as sole active ingredients, or in varying combinations as turfgrass fungicides. Proper use of these fungicides will provide effective control of almost all of the common fungus-incited turfgrass diseases, without impairing the quality of the grass. New materials now under field tests show promise of even higher levels of disease control with much greater plant safety.

Nematodes and Turfgrass Diseases

Perhaps the most outstanding single advance in turfgrass pathology this past decade has been the development of the awareness of the importance of nematodes in grass disease development. This awareness is due in part to the increase in quality of disease control provided by newer fungicides. Free of the more frequently recurring foliar diseases, turfgrass, in many instances was still not responding properly to irrigation and fertilization practices. Subsequent investigations revealed that root-feeding nematodes alone are capable of causing loss of major portions of stands of turfgrass in sections of the United States formerly though unsuited for their development. At present time, some 47

portive and grateful the turfgrass industry was.

From this time on, Dr. Couch started focusing on the new field of turfgrass pathology and was soon after formally appointed to a turfgrass pathology assignment by Dr. Burt Musser who was his department head at that time. Dr. Couch and Dr. Frank Howard at the University of Rhode Island had become the first full-time university turfgrass pathologists. Since he was new to turfgrass, Dr. Couch relied on help from Dr. Musser and often interacted with O.J. Noer and golf course superintendents including Joe Valentine and Marshall Farnham. Dr. Couch always emphasized the history of turfgrass pathology and acknowledged the contributions of men such as John Montieth, Arnold Dahl (both graduates of the Plant Pathology Department at the University of Wisconsin) and the "father of turfgrass pathology," Charles Vancouver Piper, for their early contributions to the field.

In his early years as a turfgrass pathologist (Fig. 2), Dr. Couch focused on very important diseases of the time such as rust, melting out of Kentucky bluegrass, Pythium blight, Rhizoctonia brown patch, Sclerotinia dollar spot, and root knot nematode. A major aspect of Dr. Couch's research at this time focused on abiotic factors that contribute to individual diseases such as soil moisture, pH, and plant nutrition. Dr. Couch's research took into account the pathogen in conjunction with the physiological state of the plant at a time when most plant pathologist focused primarily on the pathogen. The first edition of his book *Diseases of Turfgrasses* was published in 1962 and was the first book on the subject.

Dr. Couch received national recognition for his work describing Fusarium blight, a new patch dis-



No respecter of authority, dreaded *Fusarium* blight strikes even the high and mighty, as evidenced in this 1964 photograph. From time to time, coverage of Lyndon Johnson's walking news conferences would show the President, Lady Bird, their two beagles (Him and Her), presidential aides — including former White House press secretary Pierre Salinger — and the entire press corps strolling along a White House grounds sidewalk, unwittingly serving as the foreground for a full acre of highly photogenic patches of blighted bluegrass.

Figure 3. Photo of White House lawn with *Fusarium* blight with the caption showcasing some of Dr. Couch's trademark humor. *Golf Course Management* 53(10):18-28.

ease of turfgrasses. The disease received a lot of attention because it devastated the White House lawn and many sports fields in the early 1960's. Nineteen sixty-four was a particularly bad year for Fusarium blight at the White House and photographic coverage of president Johnson's walking news conferences often, as Dr. Couch put it, "unwittingly served as the foreground for a full acre of highly photogenic patches of blighted bluegrass." There were also several articles written about how concerned the president was about what was at that time an incurable disease (Fig. 3).

In 1965, Dr. Couch accepted a position as head of the Plant Pathology and Physiology Department at Virginia Tech and moved to Blacksburg, Virginia. While serving as department head, Dr. Couch remained busy researching disease control methods, writing a series of extension publications, revising *Diseases of Turfgrasses* for the 1973 second edition, and teaching several courses including Plant Pathology, Principles of Plant Disease Development, and Turfgrass Pathology. Dr. Couch stepped down as department head in 1974 because the administrative duties of the job were distracting him from his primary interest of turfgrass disease research. Dr. Couch began focusing on patch diseases, bacterial wilt of C-15 bentgrass, senectopathic disorders, and turfgrass disease control. Some of the aspects of disease control he investigated were the effects of formulation, dilution, nozzle pressure, nozzle type, pH, and length of storage on fungicide efficacy (Fig. 4). More notably, Dr. Couch is recognized as developing synergistic combinations of fungicides for Sclerotinia dollar spot and Pythium blight, which provided excellent disease control using less total fungicide and



Figure 4. Dr. Couch and laboratory specialist Phil Keating rating spring dead spot plots in May, 2002.

reduced the risk of fungicide resistance in the pathogen.

Diseases of Turfgrasses underwent a major revision for the third edition in 1995, and nearly ten years later is unarguably the most comprehensive turfgrass pathology text available to researchers and professionals. In 2000, Dr. Couch authored a new book entitled *The Turfgrass Disease Handbook* that is more portable and geared more for industry professionals than researchers. Dr. Couch formally retired from Virginia Tech in 2003, one day short of his 79th birthday. His retirement was in name only, as he continued come into work nearly every day and give several talks across the nation until he suffered a heart attack in July of 2004. Dr. Couch has received the R.D. Cake award from the Virginia Turfgrass Council, the Distinguished Service Award from the GCSAA, the USGA Green Section Award, and had the 63rd Massachusetts Turfgrass Conference dedicated in his honor (Fig. 5). In his 50 years of teaching students and professionals, Dr. Couch wrote over 150 scientific papers and spoke at over 500 industry conferences. He estimated in 2002 that he had taught over 4,000 golf course superinten-

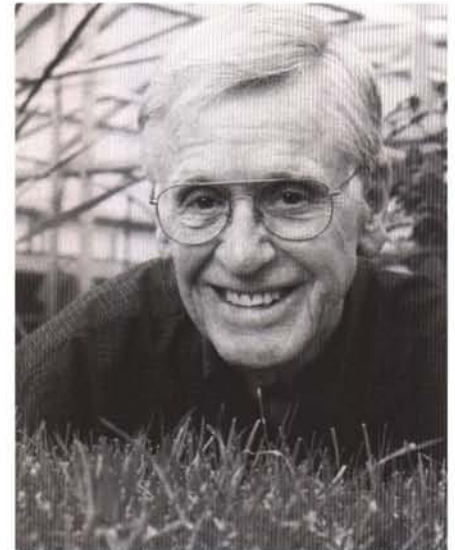


Figure 5. Dr. Couch soon after receiving the USGA Green Section Award in early 2003. USGA Green Section Record May-June 2003.

dents through GCSAA seminars.

Teaching is where Dr. Couch excelled. Whether it was one on one with a graduate student, in a classroom, or at a GCSAA seminar, Dr Couch prided himself on the success of his students. He taught difficult subjects with a lot of information to learn, yet his teaching style motivated the students and stimulated discussion. He nurtured critical thinking skills that are useful to students in all aspects of life, not just plant pathology. He also taught students to stand up for what they

knew and to learn through academic debates with others who held contrary opinions (Many of you have probably heard of Dr. Couch's ability to challenge theories he believed were not accurate).

Equally, he was aware of the trouble one could get into if they spoke too much about what they didn't have a strong grasp of, saying that "every man is wise until he speaks." If a student was not doing well, Dr. Couch took it as a personal challenge and spent extra time with them until they were back on track. A large part of Dr. Couch's success as a teacher had to do with his ability insert humor into his lectures. Dr. Couch had a great sense of humor that was never vulgar or out of line. During a lecture or seminar, if he felt the students or superintendents were getting a little overwhelmed or uninterested in the subject matter, he would either use a funny catch phrase or tell a humorous story that almost always lead back to the point he was trying to get across. For example, if he was talking about a fungicide that has the potential to be phytotoxic, he would say that it was "rough as a three-cornered cob," or "hot as a two-dollar pistol." Moreover, if he was speaking of grass that looked like it was in poor health, he would describe it as looking like "death eating a cracker".

It was these sayings, his entertaining stories, and his vast knowledge of the nature of turfgrass disease that made Dr. Couch one of the most sought after speakers in the industry. His humor was also very evident in the advertising that he did for his research program. The Virginia Tech turfgrass pathology logo has the Latin motto *semper graminis morbidus* which translates to "always grass disease" (Fig. 6). He even had bumper stickers made that said "support your local turfgrass pathologist." Dr. Couch's engaging manner led many in science and industry to support the growing field of turfgrass pathology.



Figure 6. The Virginia Tech Turfgrass Pathology logo.

With all of his professional accomplishments, it is hard to believe that Dr. Couch had time for an active personal life; however, this could not be further from the truth. Dr. Couch's Christian faith was a very strong influence on his personal life, which carried over in the way that he treated people in his professional life. Many people who have known Dr. Couch for years are unaware that he was ordained as an interdenominational minister in 1967. Moreover, Houston and Billie Couch founded the New Life Fellowship, which resulted in the establishment Christian bookstores in Blacksburg and nearby Christiansburg. The New Life Fellowship became the Dayspring Church and Academy, which began offering Christian-based private schooling in the early 1980's. Dr. Couch has performed

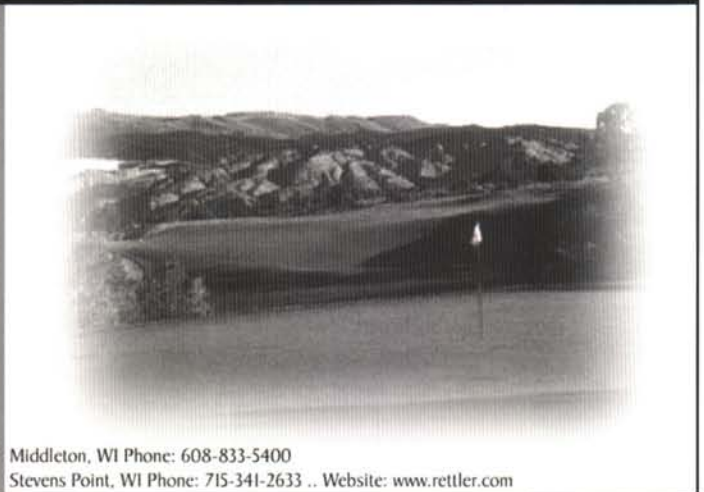
over 80 marriages of Virginia Tech students and has offered marriage counseling for them and other students as well.

Additionally, Dr. Couch performed over 300 baptisms for students who had converted to Christianity while at Virginia Tech. The most important part of Dr. Couch's life was his family. Houston and Billie Couch were married for 58 years and had five children and numerous grandchildren and great-grandchildren. Dr. Couch always beamed when talking about his family, and was always eager to share pictures and stories about them.

Dr. Couch touched the lives of everyone who knew him whether it was for his heroism in World War II, his turfgrass research accomplishments, his teaching ability, his talent as a public speaker and preacher, his sense of humor, his service to the community, or his love of his family. People felt very comfortable around him because he treated everyone he met as good friends. It is fitting that Dr. Couch's final comforting words as his large family gathered around him were "I'm going to see my Lord Jesus. I'll see all of you back home." 🌿

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