

# DOC'S DUGOUT - An Inning From Our Past

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## Dr. Glenn Burton, The Father of Hybrid Bermudagrass , Part I

### The Early Years

Glenn Burton was born May 5, 1910 in Clatonia, Nebraska. He lived and worked on a farm near Bartley, Nebraska, from 1915 until 1928. His first formal education took place in a one-room country school and later in a four-teacher high school. Many of the principles that contributed to his success were learned "on the farm." Two of the important ones were hard work and responsibility. Since he was an "only child" he had to help with his share of the farm work and complete his chores before and after school. This meant getting the job done as quickly as possible and getting the job done right so there would be time for the school basketball team.

After completing high school in 1927 he was determined to be a farmer. However, after following four-horse teams around the farm with his father for a year, he was encouraged by his high school superintendent to enroll at the University of Nebraska. While at the University of Nebraska he met Helen Jeffryes and in 1934 she became his wife.

Glenn Burton received his B. S. Degree in Agronomy in 1932. But his future really began in December of 1931, when Dr. F. D. Keim said to him, "Glenn, I want you to do your graduate work at Rutgers." He asked, "Where is Rutgers and why go there?" Keim replied, "Rutgers is in New Brunswick, New Jersey, and Howard Sprague, one of my first students has a good half-time assistantship in turf research." To a farm boy like Glenn Burton from southwest Nebraska who knew nothing about golf and who had never had a lawn at his home, that answer was not enough. Burton asked, "Why turf?" Keim told Burton, "Turf has a future. Here's a chance to get in on the ground floor. You'll get excellent training with Sprague at Rutgers." Keim further told Glenn that he must get advanced degrees if he was to guarantee him a job when he finished his education.

In January of 1932, Glenn Burton began his studies at Rutgers and finished his Masters Degree in June of 1933. He now had the degree and a love for turf but no support since the Great Depression was prevalent in the United States. So Glenn spent the next three years working with alfalfa and other crops and obtained his Ph.D at Rutgers.

Finally, in 1936, Dr. Burton arrived in Tifton, Georgia, as an employee of the U.S. Department of Agriculture. His assignment was to breed better grasses to feed livestock and to control soil erosion. Turf was not mentioned in his job description.



Dr. Glenn Burton

He spent ten years working with bermudagrass and several other species of grass.

The result of his work was an increase in yield and the release of Coastal bermudagrass. But his love of turf caused him to set aside and save samples of grasses which exhibited sod forming characteristics and potential for a grass for good turf.

### Glenn's Future is Shaped by Grau

The career of Glenn Burton took a real turn in 1946 when Dr. Fred Grau, Director, of the U.S. Golf Association Green Section (also a student of Keim), and Dr. O. S. Armodt, Glenn's USDA boss, paid Burton a visit in Tifton, Georgia. Grau and Armodt had just completed a survey of turf in the South and the survey indicated there were many problems and very little research to solve them. They asked

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Burton, if Grau could provide \$500.00 a year for turf research would he be willing to start some research studies. He of course replied "yes," and "breeding of better turf-grasses" was added to his job description.

The turf situation in 1946 in the south was deplorable as many golf greens were oiled sand, and golf tees and fairways consisted of carpetgrass. Greens on the better golf courses were seeded bermudagrasses. Turfgrasses were frequently thinned by disease, insects and nematodes, allowing crabgrass and other weeds to invade the turf. Annual ryegrass was used to overseed golf greens to provide a green putting surface in the winter. But when the ryegrass died in the spring, the transition period back to bermudagrass was a problem no one had solved. Attempts to grow bentgrass greens in the south failed because of the hot humid summers. Golfers complained that the bermudagrass greens were inferior to the bentgrass greens.

Since common bermudagrass, *Cynodon dactylon*, is a highly variable species, the seed gives rise to many different plants. Many seeded bermudagrasses from old golf greens were collected and evaluated. During this same period a variety named U-3 was selected from the bermudagrass plots at the Arlington Turf Gardens in Arlington, Virginia.

### The Breeding of the First Hybrid Bermudagrass

During the fall of 1946, a number of the top golf courses in the south were asked to send Dr. Burton a bermudagrass plug from the best part of their best putting green.

The plugs were placed in 2" pots in a greenhouse and allowed to increase in size during the winter. Burton also brought into the greenhouse a number of plugs from his pasture breeding program. In April of 1947, all potted plants were placed in 10 square foot plots, one for each grass. Common bermudagrass was used as a check. In

August of the same year, after the plots were completely covered, all plots were subjected to golf green management for three years. Further, half of each plot was overseeded with annual ryegrass in the fall to study the transition problem. The plots were rated periodically for sod density, color, frost and drought tolerance, disease resistance, weed resistance, transition effects and overall quality.

After three years of evaluation and testing, the common bermudagrass grown from seed was one of the poorest in the test. The best entry was Tifton 57, an F1 hybrid resulting from a cross between a very dense dwarf and a disease resistant selection from Burton's pasture breeding program. This Tifton 57 hybrid was bred in 1942 and officially released in 1952 as Tiflawn bermudagrass.

Tiflawn bermudagrass, like common bermudagrass, is a tetraploid with 36 chromosomes. Tests revealed that Tiflawn was too coarse and vigorous for golf greens. It was however, the best tetraploid bermudagrass for turf and was highly recommended for use on football fields, playgrounds and other rough use areas.



*The next issue will discuss Dr. Burton's contributions from Tiflawn to 2003.*

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