

THE HISTORY OF THE DEVELOPMENT OF FORAGE BERMUDAGRASS: I. THE EARLY DAYS

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It is estimated that improved forage bermudagrasses are grown on over 15 million acres in the Southeastern US. That is no accident. That is the culmination of years of research, breeding, and extension programs. It is the ultimate story of making lemons into lemonade, and many in the state of Georgia have played an important role in many steps along the way. In honor of the Georgia Cattlemen's Association's celebration of their 50th year, we begin a series of three articles this month that recount the story of the development of bermudagrass into one of the most important forage crops in the US and (increasingly) the world.



Brood cows grazing bermudagrass is a common site in Georgia and throughout much of the Southeastern US. Here, 'Tifton 85' bermudagrass is being grazed at the Univ. of Georgia's Coastal Plain Experiment Station in Tifton, GA.

In the Beginning

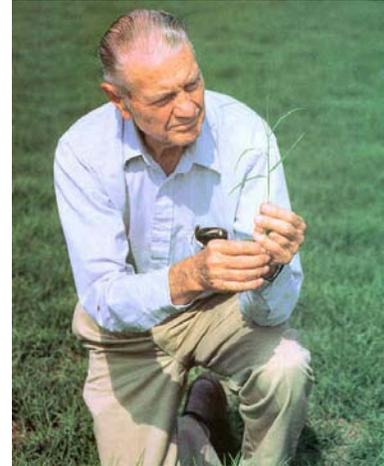
Common bermudagrass was reportedly introduced into the U.S. (probably from either India or Africa) in the early 1750s by Georgia's second royal governor, Henry Ellis, in Savannah. Subsequently, through natural dispersion, it spread to many areas of the South by the late 19th century. Though it was used for forage in pastures and hayfields during this period, it was largely regarded as a noxious weed (a reputation that it still holds in some regions).

James L. "Cowboy" Stevens was the first USDA-ARS forage agronomist in 1928 at the University of Georgia's Coastal Plain Experiment Station (CPES) in Tifton, GA. He established the initial bermudagrass nursery at the CPES in 1929 and included a local bermudagrass ecotype found in a cotton field near Tifton that he named 'Tift.' That initial introduction nursery formed the basis of forage improvement for bermudagrass. Stevens' explorations and collection trips brought many valuable bermudagrass plant introductions from various parts of the world such as southern Africa and South America.

Breeding Bermudagrass for Forage Production

It is worth a pause to reflect on the fact that those who were attempting to make an "improved" or more vigorous bermudagrass were viewed as radicals (to say the least) during the early 20th century. Few recognized the potential that bermudagrass had as a forage crop, as most were understandably concerned about the risks of developing a more aggressive weed in crop fields. So, when Glenn Burton, a USDA-ARS geneticist, came to the CPES in 1936, little if anything was known about breeding and improving bermudagrass for forage production.

Burton noticed that bermudagrass plants growing along the railroad tracks were highly variable and concluded that this species probably reproduced by cross pollination. In 1937, Burton crossed 'Tift' bermudagrass and two vigorous hay-type bermudagrasses from South Africa growing adjacent to each other in the introduction nursery. Hybrid seed was germinated in the greenhouse and 5000 spaced plants were established in 1938. Of the 147 plants selected from the 5000, selection number 35 was destined to become 'Coastal' bermudagrass (Burton, 1943). Silas Starr, then director of the CPES, felt number 35 should be named 'Coastal' to recognize the experiment station where the hybrid was made and tested.



Dr. Glenn Burton, USDA-ARS geneticist at the CPES in Tifton, GA from 1936-1997 (and informally until his death in 2005).

'Coastal' was very vigorous but set only a few seeds. In the testing process, it became evident that it may be possible to vegetatively establish bermudagrass commercially. In 1942, one of Burton's USDA-ARS bosses from Washington, DC visited Tifton and saw common bermudagrass full of seed heads growing next to Coastal with no seed heads. Burton's boss wanted to know how he planned to propagate 'Coastal.' Burton said, "vegetatively." The USDA boss said, "whoever heard of planting pastures vegetatively!" Burton accepted the challenge to make vegetative propagation of forage practical. A wooden stick shaped like a putty knife on one end was first used to push sprigs (stolons and rhizomes) into the soil like planting sweet potato vines. Later, a metal point was attached to the end of the stick. James Stephens, a UGA agricultural engineer at the CPES, developed a two-row planter. As more 'Coastal' bermudagrass was planted, farmers became innovative and developed their own methods and machines.



Sprigging stick designed to push bermudagrass sprigs into the ground.



Two-row sprig planter developed at the CPES by UGA agricultural engineer, James Stephens.

Next Month

In next month's article, we recount the story of the public-private partnership that developed from the release of 'Coastal' and other bermudagrass varieties. Then later, the story will continue with a discussion of how bermudagrass breeding began to focus more on forage quality and digestibility and set a precedent for how forage breeders have since developed new varieties.

In the meantime, you can learn more about the development of forage bermudagrass and the number of different bermudagrass varieties that are available by checking out the bermudagrass-related Extension publications on our website at www.georgiaforages.com or contact your local University of Georgia Cooperative Extension office.

got questions?

Have a question or topic that you want Dr. Hancock to address? Email him at: questions@georgiaforages.com.