

THE QUEEN OF FORAGES – ALFALFA'S HISTORY IN GEORGIA

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When I moved from my home state of Indiana to begin my doctoral studies in Georgia under Dr. Jennifer Tucker at the UGA–Tifton campus, I was excited to begin learning about forage production in the Deep South. While alfalfa is a common crop in the Hoosier state, I hadn't realized the perception of alfalfa in Georgia was very different from my home. From the Sunbelt Ag Expo to various Extension meetings, I kept hearing "Alfalfa does not grow in Georgia". As I started researching the history of alfalfa and bermudagrass, I read in the history books that "Alfalfa was primarily grown west of the Mississippi River before the 1900s." I was determined to find more information on the history of alfalfa– I believed there had to be more to the Georgia alfalfa story. When I stumbled upon the Georgia Historic Newspapers website, I found exactly what I had been looking for and more!

After searching "alfalfa" and then "lucerne" in the archives I was amazed to find that the newspaper articles that mentioned the crop came in the thousands. One of the earliest articles to mention growing alfalfa in Georgia was a note sent in 1854 to the local newspaper by J. Crawford stating he started an alfalfa patch at his home near Blakely, GA and it was growing well. In 1888, the Albany News and Advertiser shared that they were starting a contest for farmers in Southwest Georgia, and whoever grew the best acre of alfalfa hay based on yield that year would receive a prize of \$25. After this initial buzz in the mid 1800's, the news articles changed to recommendations on how to grow alfalfa in Georgia. Interestingly, many of the recommendations are still used for alfalfa production in Georgia today, which can be found in alfalfa publications at your local Extension office or online from UGA.



An article in 1872 gave a step by step process to successfully grow alfalfa: 1) plant alfalfa into a rich, dry, clean seedbed, 2) prepare the land and apply manure as fertilizer 3) Sow in rows 12 to 15" apart, 4) control the weeds after seedlings emerge, 5) Continue to fertilizer the crop, which is expected to last at least 5 to 6 years.

While early articles recommended spring seeding, later articles came to the same conclusion that recent work in Tifton demonstrated: alfalfa stands are more successful when planted in the fall. An article in 1911 stated: "The best time to sow alfalfa in the larger part of the South is the fall ..., the main danger of sowing alfalfa in the spring is crabgrass and weeds crowding out the alfalfa before it becomes well established."

As we all know, history isn't always a fairytale story, and while alfalfa thrived in many areas, there were many times alfalfa did not do as well. The early alfalfa varieties available to purchase at local seed stores were not adapted to the diseases, insects, and acidic soils of Georgia. One article in 1906 stated that "The armyworms have destroyed Mr. Robert Butler's alfalfa." A fate that I believe many of us can sympathize with today. Additionally, many farmers recognized alfalfa didn't do well in grazing situations, it needed to be inoculated, the soil needed to be well-drained, it needed a year's preparation that included liming, weed control, and fertilizer before it was planted, and the list goes on. Those who took the time, did their research, and followed the best knowledge at the time had success, and many of them wrote to the newspapers to share their experiences.

While growing alfalfa still takes concerted management effort, we have many technologies available today that make growing alfalfa in Georgia easier than in the late 1800's. Improved alfalfa lines bred by dedicated plant breeders, like Dr. Joe Bouton, have given southeastern producers varieties that are developed and well adapted to Georgia and are traffic and rotational grazing tolerant. Soil testing laboratories and soil mapping allow us to evaluate soil pH and find the areas on farms that are well drained and better suited to establishment success. Modern equipment, fertilizers, and chemicals assist in the land preparation and protection of crops from weeds and insects. Improved electric fencing, temporary fence posts, portable shade, and water systems allow for easier adoption of rotational grazing practices. Finally, modern harvesting equipment allows for preservation of alfalfa in various forms, silage, baleage, and hay, which can serve as a complete feed or

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supplement for animals during forage deficits.

Research utilizing alfalfa in Georgia was first documented by Dr. G.W. Burton when he grew alfalfa and bermudagrass together in Tifton in the 1950's. Through the years this research has continued on some level in Georgia, with recent work focusing on the use of improved alfalfa varieties interseeded into bermudagrass fields of various cultivars, including the finest stemmed to the more recently released hybrid varieties commonly grown in Georgia. Work as part of the UGA-Tifton Better Grazing Program over the past 9 years has reported (1) that rotationally grazing alfalfa-bermudagrass mixtures can provide higher stocking rates and gain per acre than rotationally grazing bermudagrass alone; (2) baleage from alfalfa-bermudagrass mixtures provides greater annual yields and forage quality than bermudagrass monoculture fertilized with Nitrogen, and (3) managing alfalfa-bermudagrass mixtures in a strategic cut and graze management system allows for summer rest and helps to optimize stand performance and extend longevity of alfalfa presence in the mixture. Most recently, my dissertation work determined that this strategic dual-use management of alfalfa-bermudagrass mixtures provided a grazing option in the fall forage gap from September to November, with calf gains averaging 1 to 2 pounds per day when the previous baleage harvest was targeted for grazing to begin 28 to 35 days later.







Table: Comparing historic recommendations from 1914 to current UGA recommendations for getting started with planting alfalfa.

Historic Recommendations	Current UGA Recommendations
1. Select a well-drained "sweet" soil "Should land be sour it must be sweetened by applications of lime"	1. Alfalfa requires well-drained fertile soil. If soil drainage is unknown, the NRCS tool "Web Soil Survey" can identify drainage for soils across Georgia
2. Select a fertile soil or apply manure. "Barnyard manure is the most satisfactory fertilizer… about 10 tons per acre should be applied"	2. Select a well-managed field with proper soil fertility and pH. Soil sampling should be conducted for both Top (0 to 6") and Sub (6 to 12") soils.
3. Have a well prepared, pressed firm, seed bed. "The ideal seed bed is one that is in a fine mellow condition to two inches, but below is firm without being impenetrable to the roots of the young plant"	3. For monoculture alfalfa stands, plant alfalfa on a well-prepared, firm, weed-free seedbed. Soil that is firm enough for planting will allow a boot-heel to sink no deeper than ¼".
4. Clean ground, free from weeds. "It is not sufficient to simply have the seedbed free from weeds, but the soil should be given clean cultivation long enough to destroy weed and grass seed"	4. Summer annual and perennial weeds are much more aggressive in Georgia than winter annual weeds. This is one of the major reasons spring plantings of alfalfa are NOT recommended in Georgia.
5. Inoculate the soil. "Transfer soil from a field where alfalfa has grown, care should be taken to keep the soil out of the sunshine, 100 to 500 pounds of soil to the acre is sufficient"	5. Many companies market pre-inoculated alfalfa seed. If there is a question about the viability of the inoculum on pre-inoculated seed, re-inoculate the seed with fresh <i>Rhizobium meliloti</i> just before seeding.
6. Select good seeds. "Get the best seed. The highest priced seed is usually the cheapest in the long run".	6. Variety selection is one of the most important considerations in an alfalfa production program. Select varieties that have been tested in Georgia, and have disease, dormancy, and grazing tolerance traits that align with your needs.
Historic Recommendations adapted from "Getting a Start with Alfalfa in Spalding County" from The Griffin weekly news and sun. published November 06, 1914. UGA Recommendations adapted from the Alfalfa Bermudagrass Management Guide and Alfalfa Management Guide.	

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Overall, alfalfa is not a new idea in Georgia, producers have been using it for at least 175 years. While alfalfa may not be a fit for every farm, it shouldn't be completely dismissed in the state as a whole because alfalfa can absolutely grow throughout Georgia! You don't have to take my word for it; I encourage you to take a look at the Georgia Historic Newspapers online yourself and see what you can find.

As Joseph E. Brown stated in 1871 in the Southern Banner:

"If, by this correspondence, we can be instrumental in awakening an interest that will cause two blades of grass to grow in the meadows of Georgia where but one grew before, we shall not have labored in vain".

Are you interested in giving alfalfa a try? Check out our resources available online at <u>www.georgiaforages.caes.uga.edu</u> and contact your county Extension agent who can help you get started!



