

Integrated Systems for Harvest Management

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Jennifer Tucker is an Associate Professor in the Department of Animal and Dairy Sciences at the University of Georgia, located on the Tifton Campus. Raised on a beef cattle operation in South Central Kentucky, she grew up learning to utilize grazing management and helped to improve the forages on her family's farm. She began at the University of Georgia in January 2016, after being the Alabama Extension Forage Specialist for three years. Previously she worked at UGA in a post-doctoral position in the biomass for bioenergy program on the Tifton Campus. In 2010 she obtained her Ph.D at the University of Kentucky, where she studied the effect of new novel endophyte tall fescue varieties on the physiology and growth of beef cattle. At UGA, she serves a split research and extension appointment and serves as the REI Coordinator for the Animal and Dairy Sciences Department on the UGA Tifton Campus. She has developed an award-winning nationally recognized research and Extension program evaluating the influence of forage quality and grazing management on beef nutrition and production in the Southeast. Specifically, her most recent work has focused on the integration and utilization of alfalfa in the deep south, alfalfa-bermudagrass mixtures under varied harvest strategies, and crabgrass as a high-quality forage for beef cattle. She has spent the last seven years obtaining industry and commodity support for the Better Grazing Program on the UGA-Tifton campus, training top graduate students who receive extensive training in beef-forage systems, being an active member of the UGA Beef and Forage Extension Teams, serving on multiple state and national boards and college committees, and developing lasting collaborations across the state, region, nation, and globe.

Historical records show average annual temperatures are increasing in most parts of the world. Precipitation patterns are also changing where, in general, storm intensities are increasing with drier areas getting drier and wetter areas getting wetter.

These changes are primarily driven by increasing carbon dioxide concentrations in the atmosphere due to the burning of fossil fuels. Models predicting future climate trends indicate ambient temperatures will continue to increase along with further changes in precipitation. These changes may increase alfalfa yields as long as adequate water is available to maintain this production. Increased carbon dioxide in the atmosphere can stimulate growth of some crops including alfalfa. In some regions, increased ambient temperature may also be beneficial. In areas where precipitation is increasing, this may also be beneficial; however, higher temperatures increase evapotranspiration which may offset the additional rainfall. In regions depending upon irrigation, the greatest threat to long-term sustainability of the production of alfalfa and other forage crops is water availability. Management changes such as earlier harvests and additional cuttings will be needed to adjust to the changing climate. In regions where precipitation is increasing, more frequent rainfall can exacerbate challenges of field curing hay. Another consideration is changing climate may increase weed and insect pressures. Climate change and related atmospheric changes can have both positive and negative impacts on alfalfa and other forage crops, and these impacts will vary across global regions. Although climate change is presenting challenges to forage production, flexibility in management can provide a sustainable future.