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Effects of mixed species grazing systems and forage quality on the performance of cattle and goats

Who cares and why?

The production of meat goats has become a significant source of income for many small farmers. This is supported by the fact that the meat goat industry is the fastest growing class of livestock in the U.S.A., quadrupling in numbers from 1990 to 2010. Though the numbers decreased slightly over the past few years, this was mainly due to parasite challenges in goats. This research work is aimed directly at finding methods to reduce challenges of goat production and provide new and innovative means of sustainable land utilization for small farmers.

Diversification of animal species results in diversification of farm income sources. Cattle and goats have different production cycles and eating habits. Producing both goats and cattle can help to ensure the availability of production stock to sell more often during the year thus increasing and improving the farm cash-flow. With the economic climate changing in the agricultural industries, we need to be looking for ways to maximize profit potential, while fully utilizing forage resources. Mixed and sequential grazing of cattle and goats can increase the efficient utilization and sustainability of forage, reduce parasitic loads and increase economic benefits for small goat and beef producers.

What has the project done so far?



A mixed-grazing project was designed to determine the performance of cattle and goats grazing together and separately to assist small-limited resource goat and beef producers to increase their production and economic base by efficiently utilizing available natural and farm resources. This project demonstrated that mixed-species grazing using goats and cattle enhance resource utilization, reduced parasitic loads in goats, increased output per unit land and improved surface water storage. Differences in animal performances were observed and suggested that kids could graze with cattle to efficiently utilize available forage resources. Parasitological

analysis of fecal and blood samples revealed that mixed grazing of pastures with cattle and goats reduced fecal egg counts in goats therefore decreasing FAMACHA scores that resulted in increased Packed Cell Volume

(PCV) and body condition scores. In mixed-species grazing, hoof action of goats contributed to improving surface water storage, hence, higher soil water content and permeability and lower soil compaction.

Impact Statement

During April of each year, Goat Field Days were conducted with experiential learning opportunities in forage production and utilization. The field days also included demonstrations of mixed-species and sequential grazing techniques. On the average, 76 % of the producers who attended the workshop supported the mixed grazing project and indicated an interest to integrate mixed-species grazing in their own operation. One hundred percent of workshop participants gained knowledge and skills about using the FAMACHA technique to determine the parasitic loads in their goat herd. Over 50% of the attendees who acquired the skills of using FAMACHA scoring reported that they saved money on parasite related health issues. Also, project staff spearheaded and assisted in the formation of the Southeastern Goat Cooperative of Louisiana to help increase producers' income by raising and marketing goats.

What research is needed?

With the rapidly escalating fertilizer prices, the present forage production system, which depends heavily on nitrogen fertilizer, cannot be sustained. Our future research endeavors will focus on testing different legumes and grass-legume mixtures without nitrogen fertilization and methods to improve soil productivity to support healthy forage growth. Carrying capacity (the number of animals that can adequately graze on a pasture at a given time) of pastures could be increased through mixed and sequential grazing systems. The existing mixed grazing project did not allow us to accurately measure carrying capacities. We intend to include carrying capacity in future studies.



Want to know more?

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