

Use of mob grazing to improve calf production, enhance legume establishment, and increase carbon sequestration in Iowa pastures

Abstract: Mob grazing is a variation on rotational grazing that has been proposed to have promise as one of the tactics graziers can use to improve cattle performance and environmental quality. This project looked at whether and how mob grazing could benefit livestock and producer management of their pastures and soil resources.

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Results of the project demonstrated that at least over a two-year period, there are no advantages of season-long mob grazing over rotational or strip grazing at an equal forage allowance in animal performance, legume establishment persistence, forage nutritional quality, or soil carbon content and water infiltration that would merit the added labor, fencing and water system costs.



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What was done and why?

The objective of this project was to identify the most effective grazing system to optimize the performance of grazing cattle, forage mass and quality, legume establishment and the physical quality of soils in Midwestern pastures.

The project involved August-calving cows, and also looked at cattle production, forage mass and botanical composition, and soil physical properties and carbon content. In spring 2010, six 10-acre tall fescue-orchard grass pastures at the Iowa State University Beef Nutrition Farm near Ames were broadcast-seeded with red clover at 8 lb/acre and divided into ten 1-acre paddocks. In 2010 and 2011, ten August-calving Angus cows were placed in each pasture and grazed from May through September by rotational, strip or mob grazing at live forage allowances of 4.0 and 3.2 percent of the cows' body weights, respectively.

What did we learn?

Season-long mob grazing in this two-year experiment did not improve cow or calf production, forage mass, the proportion of legumes in the live forage mass, or soil physical properties over strip or rotational grazing over two years. While this project was conducted under conditions of excess rainfall (year 1) followed by deficient precipitation (year 2), these kinds of extreme conditions are forecast to be more common in an increasing variable climate. Results indicate that the economic return on the investments in labor, fence and watering systems would improve if producers implemented a less intensive system. Possibilities are strip or rotational grazing, particularly under conditions with high soil moisture on highly fertile soils.

However, these results don't mean that mob-grazing has no role in Iowa pasture management. On the contrary, short-term strategic use of mob grazing to achieve specific goals such as increased plant species diversity or organic matter, or improved wildlife habitat in grasslands seems to be effective. The most appropriate uses will depend on the specific goal for utilizing mob grazing and the existing soil and climatic conditions.