

CEFS



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**Center for Environmental
Farming Systems**
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Pasture-Based Dairy Unit

Objectives

- To examine grazing strategies and other herd management techniques that provide environmentally sound and economical milk production while also generating an acceptable level of family income and quality of life.
- To evaluate and disseminate practical results among farmers, farm advisors, service industry personnel, students, and others.

Opportunity

Eastern North Carolina has potential advantages for pasture-based dairy production systems: productive land; a long growing season; a need for diversification; and less urban pressure compared to other parts of the state.

Lower-investment pasture systems may provide a competitive advantage for new or relocating dairy farm businesses. The Southeastern U.S. is deficient in fluid milk products and economic, pasture-based dairying may be one way to help stabilize local milk supplies.



Dairy Facilities

The CEFS dairy is different from most dairy farms in NC and the US for several reasons:

1. Approximately 140 cows and associated young stock do most of forage harvesting via grazing although supplemental concentrates and stored forages are available as needed.
2. Pasture-based also means that there is minimal manure storage and cattle recycle nutrients from urine and feces back to the fields.
3. The milking facilities are a "swing-type" with 14 units, allowing cows to be milked efficiently within 2 to 3 hours each milking rather than long shifts of 5 to 7 hours.
4. Cows are seasonally calved so that animals can be managed efficiently in groups.
5. Crossbreeding of Jersey, Holstein, and Norwegian Red cattle is studied in comparison to pure Jerseys.
6. New-born calves are started on pasture in small groups at about 10-14 days of age and fed milk once a day in a trough.
7. There is no free-stall housing; however, shade paddocks are used in summer and supplemental forage is provided in designated winter lounging areas.



Projects and Activities

- Examine seasonal dairy calf, heifer and cow management with fall-calving cows.
- Develop pastures with various combinations of forages to optimize opportunities for year-round grazing.
- Compare Jersey cows to Jersey-Holstein crosses and to 3-way crosses of Jersey-Holstein-Norwegian Red for production and reproductive efficiency.
- Examine optimal stocking rates for dairy pasture systems and develop strategies for optimal supplementation of pasture with grains and stored forages.
- Examine alternative strategies for parasite control and control of mastitis.
- Encourage dung beetles and other beneficial organisms.
- Monitor nutrient inputs and outputs and optimize economic and environmental goals.
- Explore alternative strategies for keeping cows cool and comfortable during summer months including use of agroforestry and irrigation for cooling.

- Examine differences in milk composition from various feeding regimens.
- Studies on organic dairy practices in support of a growing organic dairy industry.
- Conduct pasture management training schools and internships for farmers, agricultural advisors, and students.

Significance

Results of studies from the Center for Environmental Farming Systems could increase the competitive position of North Carolina's dairy industry. New and more profitable dairy farm businesses boost the economies of rural communities and enhance the survival of local businesses.

A shift to pasture-based systems would mean less investment in facilities and would reduce energy use for pesticides, fertilizer, and field operations. Pasture-based systems also may improve animal health, reduce cow turnover rates, improve some aspects of milk quality, and enhance the image of dairy farms. Pasture-based systems are expected to have less erosion, reduced use of farm chemicals, and to effectively recycle manure nutrients.

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