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Grazing Lands Conservation Initiative

## Converting to a Grass-Based Dairy? Here are four tips to help you succeed.

By: Kindra Gordon

Grass-based dairy farming can work anywhere cool-season grass and clover pastures grow. So says Darrell Emmick, a state grazing land management specialist with USDA's Natural Resources Conservation Service (NRCS) based in Cortland, NY. Emmick also holds a doctoral degree in animal behavior, which gives him a unique perspective in the foraging behavior of bovines. Here, he shares four tips to enhance grass-based dairy efforts.

**1. Dairy operators must change their mind before changing their management.** "The biggest challenge farmer's face when converting to a grass-based production system is in changing their mindset," says Emmick. He explains that many farmers bring the "maximum production = maximum profit" equation with them to grass farming, when instead they need to start thinking of "optimum production = optimum profit."

Emmick says, "Sometimes optimum production does mean maximum production, but certainly not all of the time. When the cost of feed is higher than milk price, optimum production means feeding less of the costly items and letting the cow consume more low cost pasture. Producing less may well provide greater profits through cost reduction."

He adds, "I knew a farmer who could get 26,000 lbs of milk from his grass-based Holstein dairy herd. However, he could make more money by feeding for 22,000 lbs. Herd average is not the answer, profit per hundredweight of milk produced is."

**2. Recognize foraging behavior and diet selection are learned behaviors.** What livestock learn to eat, they learn to eat early in life – usually from their mother, explains Emmick. Thus, he says, "Dairy calves tied up to a calf hutch learn nothing about being grazers, grazing, or selecting their own diets."

Hence, when implementing a grazing dairy system, calves will need to be taught to become graziers at an early age. Emmick recommends getting calves on grass as soon as possible – either with their mother for 8-10 weeks or a nurse cow. These cows with calves should be in a separate pasture away from the milking herd. "Start young," says Emmick.

**3. Be cautious of over-feeding protein.** When it comes to monitoring animal per-



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formance, Emmick calls the cow “the lie detector,” and says, “Regardless of what a computer ration says we should feed cows on pasture, if they are not eating well, are not producing lots of milk, or they are losing body condition, it is probably not the pasture’s fault.” Instead, he says it’s likely she is being over-fed protein in the barn ration.

He explains, “Pasture forages range from 20 to 34% crude protein. A cow only needs about 16 or 17% protein in her diet. Over-feeding protein causes sub-clinical ammonia toxicity, which causes cows to go off feed and divert energy away from milk production to detoxify and eliminate the ammonia – this all causes a drop in milk production. The moral to this story: pastured dairy cows do not need to be fed protein unless the pasture is in short supply. If this is the case, then all nutrients will be in short supply. Generally, pastured cows should be supplemented with energy.”

**4. Monitor when and what cows are eating.** A cow’s dry matter intake from a pasture hinges on three things, Emmick explains – 1) the number of bites a cow takes per unit of time, 2) the amount of forage taken in with each bite, and 3) the amount of time a cow spends grazing.

“Anything that gets in the way of this formula will result in a loss of intake and milk production,” he says. Therefore, to ensure an animal’s opportunity to optimize intake he offers three simple rules:

**Rule 1:** Cows should be grazed on pastures that are 6 to 8 inches tall. Emmick explains that forage heights of less than 4 inches reduces intake per bite. Forage heights of greater than 10 to 12 inches have increased fiber levels which increase tensile and shear strength, which reduce bite rate.

**Rule 2:** Pastures should have at least 50% legumes in the stand, which optimizes bite rate and intake per bite. Emmick further explains that dairy cows, beef cattle, and sheep prefer legumes over grass by a 70 to 30 percent ratio. “Legumes are higher in protein, higher in energy, are more digestible, and animals can eat legumes faster than they can eat grass. Thus, legumes are their preferred food,” he says.

**Rule 3:** Allow cows to graze during the first four hours and last four hours of daylight. Ruminants are crepuscular – meaning they are most active during the gray light hours at dawn and dusk, explains Emmick. To accommodate this natural foraging behavior and ensure high dry matter intakes from pasture, cows should be on pasture the first and last 4 hours of daylight, he says – which may mean shifting traditional milking times.

## Common Mistakes To Avoid

New York animal behavior and grazing management specialist Darrell Emmick also offers these do’s and don’ts for grass-based dairies:

**Don’t try to make milk on less than dairy quality pasture.** The best land grows the best forage, and the best forage produces the most milk at the lowest cost. He says, “Keep off the mountain, out of the swamp, and out of the woodlot. They are not dairy quality pastures.”

**Don’t try to make milk on too few acres of pasture.** “Too few acres of pasture simply shorts the animals on food, increases the amount of high-cost feed fed in the barn, and reduces the value of pasture,” Emmick says. He recommends grass-based dairy farms should plan on having 1-acre of high quality pasture per dairy cow.

**Do offer a diverse diet.** Providing a mix of several grasses, legumes, and edible forbs is ideal, according to Emmick, who says cows prefer dietary diversity over monocultures.

**Do allow time to adjust.** “Change takes time,” says Emmick. He explains: Cows that have never been out grazing need time to learn. Farmers who have never grazed their cows before need time to learn. Pastures that have never been grazed properly before need time to recover and develop.

“Start slowly and give all parties time to adjust,” he suggests, and concludes, “The more we recognize and accommodate the nutritional and behavioral needs of dairy cows on pasture, the more contented and productive they – and we – will be.”



## UPCOMING GRAZING EVENTS

**June 21-23 -- American Forage And Grassland Council Annual Conference,** University Plaza Hotel, Springfield, MO. Details at [www.afgc.org](http://www.afgc.org).

**Sept. 5-7 -- National Hay Association Annual Meeting,** Griffin Gate Marriott Resort, Lexington, KY. Watch for details at [www.national-hay.org](http://www.national-hay.org)

**Sept. 12-15 – National Goat Conference,** Leon County Civic Center, Tallahassee, FL. For more information contact Dr. Ray Mobley at 850-412-5252 or [ray.mobley@fam.u.edu](mailto:ray.mobley@fam.u.edu) or Ms. Angela McKenzie-Jakes at 850-875-8557 or [angela.mckenziejakes@fam.u.edu](mailto:angela.mckenziejakes@fam.u.edu). Their websites are located at <http://www.fam.u.edu/goats> or <http://www.fam.u.edu/herds>.

# CALIFORNIA CATTLE OPERATION WINS 2010 NATIONAL ENVIRONMENT AWARD

Leavitt Lake Ranches of Vina, Calif., has been named the 2009 National Environmental Stewardship Award winner. The operation was honored at the 2010 Cattle Industry Annual Convention for making environmental stewardship a priority while improving production and profitability.

The Environmental Stewardship Award is sponsored by Dow AgroSciences, the USDA National Resources Conservation Service (NRCS) and the U.S. Fish & Wildlife Service, and is administered by the National Cattlemen's Beef Association (NCBA) and the National Cattlemen's Foundation (NCF).

Leavitt Lake Ranches is owned and operated by Darrell Wood, his wife Callie, son Ramsey and daughter Dallice. It has family ranching ties dating back to the 1860s. Working in segments of agriculture and without any cattle or land when they wed in 1981, Darrell and Callie had a vision to restore ranches that had been owned by Darrell's family. They began to acquire ranches and cattle, leasing property and gradually buying the former family property.

Today, they own about 3,670 acres of private land, manage 25,000 acres of Bureau of Land Management permits and lease another 11,000 acres between the winter range annual grasslands of the Vina Plains and the summer range on high elevation meadows of Lassen County. They run 600 mother cows and 400 yearlings and farm 600 acres of alfalfa and 900 acres of irrigated pasture. The cattle herd is made up of spring and fall calving herds of registered and commercial Angus cattle.

The Wood family has implemented a number of practices aimed at protecting and improving the land upon which they make a living. These include:

- Worked in cooperation with The Nature Conservancy on a restoration plan for the Vina Plains, vernal pools project. The vernal pools are home to several threatened, endangered or at risk plant and animal species
- Provide habitat for an abundance of wildlife including waterfowl, mule deer, pronghorn antelope, aquatic species, upland game birds and sage grouse
- Improved irrigation systems, constructed cross-fencing, installed livestock water developments, conduct seeding, decrease streambank erosion and implement an overall prescribed grazing plan
- Improved riparian conditions along Pete's Creek and restore the hydrology of the surrounding meadow. This was targeted to increase sage grouse habitat
- Participated in Nutritional Balance Analyzer program, a pilot program that tracks forage quality on rangelands through livestock fecal analysis
- Fenced off riparian area to improve habitat condition for wild salmon that utilize Deer Creek for spawning
- Completed conservation and grazing plans on all the lands associated with Leavitt Lake Ranches, where resource concerns were identified and technical assistance was provided to alleviate them.

"The Wood family has taken a leadership role through the cohabitation of endangered species and cattle," said Dave Petty, chairman of the Environmental Stewardship Award selection committee and 2001 national award winner. "They show that cattle ranching supports these species better than non-use of the land."

Darrell Wood is serious about the family's approach to caring for the environment. "I take quite a bit of pride in knowing that this ranch is going to (thrive) in perpetuity, not only for my kids and their kids but for future generations down the line," he said. "I feel very good about that."

Callie Wood says caring for the environment involves respect for generations and the environment. "Stewardship is just like values that you learn from your parents or your grandparents, and it is passed down," she said.

The lessons have been well-learned. "In order to have a sustainable ranch, we need to be a steward of the land," said daughter Dallice. "And by doing what we're doing – by irrigating and rotational grazing and working with NRCS – I believe that's stewardship."

Leavitt Lake Ranches was nominated for the Environmental Stewardship Award by the California Rangeland Trust and the California Cattlemen's Association, with which the family has partnered to apply conservation and protection practices. In addition, the Woods have partnered with USDA-Natural Resources Conservation Service through the Environmental Quality Incentives Program; Wildlife Habitat Improvement Program; Wetlands Restoration Program; Grasslands Reserve Program; Nutritional Balance Analyzer Program and Texas A & M University. They also have working relationships with the U.S. Fish & Wildlife, Partners for Wildlife Program; The Nature Conservancy; Deer Creek Watershed Conservancy and Ducks Unlimited.



## *Other finalists for the 2009 Regional Environmental Stewardship Award included:*

**Region I: Young's Cattle Co., Belmont, Ohio**

**Region II: Greenview Polled Hereford Farms, Inc., Screven, Ga.**

**Region III: Eckenfels Farm, Sainte Genevieve, Mo.**

**Region IV: Stoney Point AgriCorp, Melissa, Texas**

**Region V: Pape Ranches Inc, Daniel, Wyo.**

**Region VII: Daybreak Ranch, Highmore, S.D.**

The Environmental Stewardship Award has recognized the outstanding stewardship practices and conservation achievements of U.S. cattle producers for almost two decades. Regional and national award winners are honored for their commitment to protecting the environment and improving fish and wildlife habitat while operating profitable cattle operations. For more information or to nominate a cattle operation, visit [www.environmentalstewardship.org](http://www.environmentalstewardship.org).

# Grass-Developed Heifers have higher pregnancy success, finds South Dakota study

If you AI heifers, George Perry, a beef reproduction specialist at South Dakota State University, also has some important management reminders. Perry reports that how heifers are managed after they are artificially inseminated (AI'd) can have a significant impact on pregnancy success.

Perry and his colleagues at SDSU studied heifers developed in feedlot and pasture situations and found that the feedlot developed heifers had a higher percentage cycling prior to breeding, but the grass developed heifers actually had a higher pregnancy success. Perry attributes this to a negative energy crash the feedlot developed heifers experienced after the transition from the feedlot to grass immediately following breeding.

Specifically, Perry says, "Any sudden change in diet following insemination can negatively affect pregnancy success." He says research indicates that if nutrition decreases even by as little as 15% after AI, it can affect embryo quality.

He explains, "When cattle are introduced to a novel environment, they try new feedstuffs a little at a time and then increase intake. This period of adjustment can result in a negative gain on heifers – which is what happened to the feedlot developed heifers when they were put out on pasture for the first time after breeding."

To minimize this period of negative energy gain, Perry suggests producers adapt heifers to grass for up to a month before breeding. The heifers can then be dryloted and supplemented for 10 days while AIing, but when they are turned out to grass post-AI, they should not go through the negative gain period.

Perry emphasizes to producers that heifer development shouldn't be viewed as "just the time from weaning to breeding." He said, "Heifer development is what goes on after breeding too."

He concludes, "We want to manage heifers to stay in the herd and have a long, productive life." One of the keys to achieving that is to keep nutrition consistent before and after AI, according to his research.

## GLCI State Spotlight on Illinois

The Illinois NRCS and Illinois GLCI are working together on a new grazing campaign, by creating a tagline to help promote their efforts. The theme they've developed is: "Good Grazing Makes Good Sense!"

Exhibits, factsheets with success stories and testimonials, radio PSAs and more materials are being developed around the tagline in order to help spread the word about the benefits of grazing in Illinois.

- Submitted by Paige Buck, Public Information Officer, NRCS State Office - Illinois

To have your GLCI activities or upcoming events highlighted in this newsletter, contact Kindra Gordon at phone 605-722-7699 or kindras@gordonresources.com.

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- Contact these affiliated organizations:
- American Farm Bureau Federation (202) 484-3608
  - American Forage and Grassland Council (800) 944-2342
  - American Sheep Industry (303) 771-3500
  - Dairy Industry (517) 323-6575
  - National Association of Conservation Districts (202) 547-6233
  - National Cattlemen's Beef Association (202) 347-0228
  - National Farmers Union (202) 554-1600
  - Society for Range Management (303) 986-3309
  - Soil and Water Conservation Society (515) 289-2331, ext 13