

► Utah beef producers needed an alternative to traditional rangeland production.



Giving Utah Beef a Future

With rangeland beef producers in Utah facing higher production costs and questions about the future of grazing on public land, Utah State University researchers are prepared to give them the cows and the system they need to remain economically viable through the 21st century.

Story & photos by Ed Haag

It is a question some of us have asked ourselves. If you had to design a new beef production system from scratch, with existing resources but no preconceived notions or regional historical reference points, where would you start?

For Randy Wiedmeier, nutritional researcher, and his colleagues participating in the Utah State University (USU) Irrigated Pasture Research Program, it was more than a rhetorical question. That is precisely what the state of Utah asked them to do.

The issue that precipitated the request from the body politic was the practice of grazing on public land. For well over a century, permits and leases were purchased to manage cattle on state and federal sites. As the debate over public land usage grew

louder, that complex and sometimes brittle working relationship between government land managers and ranchers was threatening to unravel.

“The USU Irrigated Pasture Research Program was initiated due to a pressing need of our cow-calf producers, most of whom depend heavily on the grazing of public land,” Wiedmeier says. “We are studying beef cattle production on irrigated pastures as an alternative, either partially or totally, for production on BLM (Bureau of Land Management), Forest Service and state leases.”

A new world out there

Even if existing issues are resolved to the satisfaction of all parties tomorrow,

Wiedmeier questions the long-term economic viability of grazing cattle over large stretches of marginally productive land.

He sees a broadening disconnect between these grazing systems and profitability, as fuel and labor costs take an increasingly bigger bite out of the rancher’s bottom line.

“Fuel is what is hitting these range operations the hardest,” Wiedmeier says. “When you are driving around every day checking fences, water and those sorts of things, it can’t be easy.”

A Sustainable Agriculture Research and Education (SARE)-sponsored beef producer survey that polled 192 Utah grazing permittees who were dependent on a mix of private and public lands, and

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201 producers who were solely dependent on private grazing lands, drew some telling responses. One of the most significant was that 37% of the respondents were age 65 or older, while only 3% of the respondents were 35 or younger, and that a full 40% of those surveyed planned to retire soon.

Wiedmeier sees a new generation of beef producers currently studying at USU as not, for the most part, the children of ranchers.

“Hardly any of them want to be in the business,” he says. “Most of my students are kids who have been removed from agriculture for two generations.”

He adds that these future beef producers aren’t as committed to the traditions and mystique of rangeland ranching as they are

to the idea of producing a quality product and making a profit.

New cow for a new system

While rangeland beef production has been a major component of rural Utah life for almost two centuries, researchers and economists at USU have long felt that systems that involve raising beef on irrigated pasture have been largely underutilized.

The mandate of the irrigated pasture team was to develop a profitable grazing system that was based on sound economics and took into consideration the emerging realities that will affect beef production now and in the future.

Wiedmeier notes that while irrigated

ground in Utah is considered underutilized for beef production, it is a finite resource, so the team chose to focus on intensively managed grazing systems that were proven to maximize return to the producer while, at the same time, being sustainable.

One of the first tasks the team faced was to evaluate cow types and determine what size mother cow would be best suited to an irrigated pasture environment.

“The desert rangelands in Utah dictate a 1,000- to 1,100-pound cow producing 8 to 10 pounds of milk per day,” Wiedmeier says. “I felt that larger, heavier-milking cows with terminal calves with pedigrees stacked for growth would be the best match for nutrient-dense irrigated pastures.”

Wiedmeier says he also felt the larger cows, with higher milk production and heavier calves, would be better-suited to the retained ownership option and the current high cost of finishing.

Test-driving the new system

This premise was tested beginning in 2000 in a series of intensive summer grazing studies using 1,350- to 1,400-pound (lb.) cows producing 25 lb. of milk per day, and bred to bulls with expected progeny differences (EPDs) for a yearling weight (YW) of +100.

Studies continue to this day, and the research team has made significant progress in refining the system since 2000. Most data used in this article is from yet unpublished studies conducted in 2007.

The antithesis of Utah’s traditional rangeland production system — where cow-calf pairs grazed lower-quality forage for long periods on large public leases — the cow-calf pairs in these 2007 studies were released on improved, irrigated endophyte-free tall fescue, grazing alfalfa and bird’s-foot trefoil pastures, using an intensive grazing system that required the livestock to be moved to a fresh paddock every 24 hours.

“We allowed the terminal calves access to the next day’s paddock through a creep gate in the electric polywire fence as a green creep feed,” says Wiedmeier, noting that the goal after 24 hours was to leave at least a 4-inch (in.) stubble for rapid regrowth.

Dry-matter (DM) intake was measured using a daily clip plot method.

Wiedmeier adds that the creep gate played an important role in helping balance the nutritional intake so it favored the highest economic return.

“The calves served as the leader herd, harvesting the more nutritious portions of the plants and leaving the portions of



► Unimpressed by the quality grade of slaughter calves from the first study, Wiedmeier now insists on terminal calves having at least 50% Angus genetics.

the plants that more closely matched the nutrient requirements of the cows,” he says.

The data collected from the initial studies confirmed Wiedmeier’s suspicions that this new, intensive management approach to beef production could turn out a crop of terminal calves that, at weaning, was of uniform and desirable weight.

He points out that the average weight of the terminal calves — both steers and heifers — when they were introduced, with their mothers, to the irrigated pasture system was 220 lb. With the green-creep-feeding system and the heavy-milking mothers, the calves averaged 3.5 lb. per day so that at the end of 168 days they averaged 808 lb.

In the 2001 book *Range Management: Principles and Practices* the author points out that the average weight attained on various rangeland grazing systems is 430 lb., with a range from 382 lb. to 475 lb. Wiedmeier estimates that a 10-year average on Utah desert rangeland is 400 lb. after 205 days with a composite daily weight gain of 1.75 lb. per day. He adds that most Utah rangeland graziers retain ownership of calves until they reach 500 lb.

With a weight advantage of almost two-to-one in favor of the intensively grazed weaned terminal calves over conventional rangeland-grazed calves, Wiedmeier sees the intensively grazed animals at a distinct advantage going into the current market.

“With feeding costs going through the roof, the heavier the calf is at weaning the less you have to put into it before it is ready for slaughter,” he says.

Bigger calves, better return

Wiedmeier’s observation is not an exaggeration. A Sept. 5, 2008, Texas Extension/U.S. Department of Agriculture (USDA) newsletter revealed that the costs of gain in summer 2008 at Kansas feedlots continued to set record highs in July, mostly due to high corn and alfalfa hay prices.

Corn prices have averaged above \$6.00 per bushel since June — nearly a \$2.00-per-bushel rise over last summer — with the July price hitting a record at \$6.38 per bushel. Ground hay average prices were at yearly highs, averaging \$136.96 per ton, up from \$93 per ton last year.

The newsletter went on to report that in July, the average cost of gain for steers was \$87.28 per hundredweight (cwt.) —

substantially higher than the \$74.22 per cwt. in 2007 — while the average cost of gain for heifers was \$98.89 per cwt., \$13.73 per cwt. or 17% higher than 12 months ago. The

projected cost of gain for steers placed in mid-August was \$101.25 per cwt.

Because the study’s terminal calves were all around 800 lb. at weaning, they could move on as feeders without any additional time spent as stockers. For Wiedmeier, this fact in itself could put more money into the pocket of the cow-calf operator

who selects irrigated intensive grazing over rangeland production.

“Calves sold at weaning change hands an average of two times before reaching slaughter weight,” Wiedmeier says. “This eliminates the commission ranchers need to pay for resale and allows the cow-calf producer to benefit from superior genetics.”

He adds that once the calves were in the

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feedlot they were rapidly stepped up to a 75% cereal grain (usually barley), 20% forage (corn silage, alfalfa hay), and 5% protein/vitamin/mineral supplement total mixed ration (TMR).

“The average daily gain remained about 3.5 lb. through the feeding period from November through January,” Wiedmeier says. “So the average February weight was [808 + (3.5 × 90)] about 1,123 pounds at the market high.”

While the harvest weight was ideal, Wiedmeier admits that the initial study calves did not grade as high as he would have liked when subjected to standard USDA quality and yield grading.

“Yield grades were 1 to 2,” he says. “The problem was quality grade. Only 30% graded Choice, 70% graded Select.”

A taste panel confirmed the initial grading conclusions when it indicated that while the beef was very tender (due to age), it had lower flavor and juiciness scores when compared to USDA Choice short loins.

Wiedmeier notes that this problem has since been at least partially resolved by making sure the terminal calves are at

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least 50% Angus. Cows of predominantly Angus breeding were bred to Charolais or Simmental bulls. Cows lacking Angus breeding were bred to terminal Angus bulls.

“Now of course it is much easier to select bulls that will pass on the propensity for rapid growth to their offspring, but also enhance carcass characteristics,” he says.

The numbers sell the system

Wiedmeier says he and his colleagues involved in the USU Irrigated Pasture Research Program have been more than satisfied with the results of their work.

Data collected from their studies show that their total feed cost (summer grazing on irrigated pastures + fall and winter grazing on standing silage-type corn or forage sorghum plants) was about \$335.48 per pair per year. Nonfeed costs penciled out at an additional \$120 per pair per year. “So the total annual cow cost is estimated at (\$335.48 + \$120.00) \$455.48 per pair per year,” Wiedmeier says.

Dillon Feuz, a USU ag economist who has been recently studying the effect of higher winter hay prices on summer rangeland operations, estimates that the average cost to produce a 525-lb. calf on a typical public land lease grazing system is \$500 per pair per year.

Wiedmeier does the math:

“So, if we calculated the cost per pound of weaned calf (late October), it would be as follows: intensive production on irrigated farmland: \$455.48 per pair per year ÷ 808 pounds of weaned calf (late October) = \$0.5637 per pound of calf weaned,” he says. “On a typical range operation: \$500.00 per pair per year ÷ 525 pounds of weaned calf (late October) = \$0.9524 per pound of calf weaned.”

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“Calves sold at weaning change hands an average of two times before reaching slaughter weight. [Selling heavy calves direct to the feedlot] eliminates the commission ranchers need to pay for resale and allows the cow-calf producer to benefit from superior genetics.”

— Randy Wiedmeier