



# Vet Call

► by **Bob Larson**, professor of production medicine, Kansas State University

## Efficiency in beef production

*Beef production has become more efficient in the 30-plus years that I have been involved in the industry. This achievement is due in large part to the genetic selection efforts of seedstock suppliers. I am surprised at times when this achievement is overlooked and sometimes even derided by some beef producers and agriculture detractors.*

### Efficiency defined

As in all discussions, it is important to clarify the meaning of key words. Efficiency in beef production is defined as the value of all inputs or amount of inputs of particular value divided by the quantity or value of output. Some examples include:

- ▶ dollar value of all inputs divided by pounds (lb.) of weight sold, or
- ▶ amount of specific inputs (such as acres of land, gallons of petroleum products or number of breeding females) divided by the number or value of pounds sold.

Using modern breeding, health, and growth management, U.S. beef producers produce much more beef per acre, per gallon of petroleum product and per bred female than was conceivable a generation ago.

Some of the areas within beef production that I think have not reached their potential efficiency include number of calves born per exposed female, percentage of calves that survive to market, growth efficiency (pounds of weight gain per calorie consumed), water use efficiency, number or pounds of calves per acre of land, and percentage of carcasses grading USDA Choice and higher per inputs such as acre of land or calorie of feed. Improving efficiency in these areas will involve all aspects of cattle and beef production, including genetic selection, grass

and range management, reproductive management, health management and disease prevention, and nutritional management.

One important caution when designing a management system to improve efficiency using a single measure is the risk of decreasing efficiency as determined by other measures. For example, a single-minded effort to increase pounds per calf weaned may decrease calves weaned per acre and calves weaned per cow exposed, thereby decreasing efficiency measures such as pounds/value sold per acre or pounds/value sold per exposed cow. Sometimes efforts to improve cost efficiency when measured as dollars of expense per cow exposed will backfire if number of calves weaned per cow exposed or weight/value of calves weaned decreases, resulting in higher expenses per dollar of income.

It is important when determining how you want to improve efficiency to recognize what resources on your farm are most valuable and need to be conserved. If land is your most valuable resource (as determined by being the input accounting for the highest percentage of cost), you must not lose sight of value of

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outputs per acre of land. If cows are your most valuable resource, you must emphasize value of output per cow exposed.

By focusing your management plan on improving the efficient use of the most important two or three inputs on your particular operation, improving efficiency

has the most opportunity to improve profitability of your cattle business. Over time, the value of some inputs is likely to increase or decrease in relative importance, meaning that you must occasionally evaluate which inputs are currently the most valuable and readjust your management to emphasize their efficient use.

### Tradition of stewardship

Many people will quickly recognize that increased efficiency does not equal increased profits. This is due to the fact the value of both inputs and outputs is largely driven by the supply and demand of competing products — independent of beef production costs. In addition, the value of key inputs, such as land, has grown even faster than the growth in efficiency of land use. It is often incorrectly implied that since increased efficiency does not automatically lead to increased profits, decreased efficiency would automatically lead to increased profits. However, it is difficult to imagine a successful long-term business plan based on production of less beef per valuable resource, such as acre of land, gallon of gasoline, bushel of corn or ton of hay. Profitability for beef production relies both on increasing efficiency and strengthening one's marketing position in relation to competitors.

The beef industry should be proud of the fact that we have learned to use the resources that this country greatly values (land, labor, petroleum and feed) more efficiently. There are still opportunities to continue this tradition of stewardship, and I look forward to seeing the improvements that we will achieve during the rest of my career in the beef industry.

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