

# From Conception to Consumer

A comprehensive beef production program

by Susan McGinley

**T**he University of Arizona's V Bar V Ranch in north central Arizona is cooperating with scientists on campus and with beef industry professionals to develop strategies that improve beef production right down the line, from "conception to consumer," according to Mark Enns, a professor of animal sciences and a participant in the V Bar V research program coordinated by resident director David Schafer.

"We've tried to set up something that mimics the entire beef industry," Enns says. Cattle that are born and bred on the ranch are later weaned and shipped to the West Campus Agricultural Center's feedlot in Tucson. Meat cuts from these animals have been tested at local markets. "All cattle research we do at the V Bar V is designed to increase the profitability of beef production in Arizona," Enns says. "We want the Arizona producer to stay in business, make money and produce beef the consumers want to eat."

## THE V BAR V RANCH

The V Bar V is a working ranch where faculty and staff in the Department of Animal Sciences, the Department of Veterinary Science and Microbiology, and other UA College of Agriculture and Life Sciences departments collaborate on applied research to develop and improve beef production strategies that will serve real needs of commercial ranchers. The value of all cattle and calves in Arizona is approximately \$580 million.

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### ESTRUS TIMING

To reduce the time and money ranchers spend in physically breeding cows with bulls, animal sciences graduate student Clay Carlson is studying ways to stimulate all of the cows in a herd to come into estrus simultaneously. Ranchers can then perform artificial insemination on the cows together using semen from the most desirable bulls.

Carlson has tested four different estrus synchronization protocols on cows from three different breeds: straight Hereford, Bar T Bar composite, and a mixed breed. The protocols offer more flexibility to the rancher in breeding, and can actually cut the cost by 30 to 40 percent over traditional methods.

### MINERAL SUPPLEMENTS

Extension animal science specialist Jim Sprinkle is testing selenium and copper supplementation in the V Bar V herd to prevent reproductive and immune problems in cows and calves. Copper is not available to the plants in Arizona, and the V Bar V ranch soil is deficient in selenium.

Sprinkle is inserting a mineral bolus (tablet), provided by Telsol, Ltd, England, down the esophagus into the rumen. Preliminary results show some positive effects on reproductive rates in the cows, meaning that a producer could potentially increase

the number of calves sold the following year by inserting the bolus before the breeding season. At the feedlot in Tucson, Sprinkle is measuring the excretion levels of selenium and copper in the animals to determine whether they are getting enough, and to make sure they are not excreting excess amounts of these nutrients into the environment.

### REPLACEMENT ANIMALS

To help identify animals that have a greater chance of producing a calf every year, graduate student Heather Salazar is looking at improved methods for choosing replacement females for the cow herd. Borrowing an idea from the sheep industry, Salazar is injecting GNRH, a naturally occurring hormone, into V Bar V heifers in the feedlot and measuring the amount of luteinizing (reproductive) hormone the cow produces in response to the injection. Higher levels of this hormone indicate increased fertility and a greater potential reproduction rate. Reproductive ability in cows is the single most important factor affecting profitability.

### MEAT QUALITY

David Auhl, an animal sciences graduate student, is conducting a study at the West Campus Agricultural Center in Tucson to determine optimum management practices for producing both conventional and natural beef. He is focusing on the best feed for each, and the resulting quality of the meat. A taste panel at the UA meat lab is rating the beef cuts for flavor, tenderness, juiciness and mouth feel. Both types of beef are grain fed, but the protein content in the feed is different, and natural beef animals receive no growth promotants or antibiotics. The idea is to identify the animals best suited for each product, then feed and market them appropriately. ❖