Early Weaning

Management strategy is a good bet for beef producers in drought-stricken areas.

by Sandra Avant, Agricultural Research Service

At the beginning of 2013, cattle ranchers in the Northern Plains were among U.S. agricultural producers still feeling the lingering effects of the sweltering 2012 drought, the worst in half a century.

Beef cow numbers were at their lowest in 50 years as U.S. beef producers — severely affected by extended drought — tried to recover from some of the driest months on record.

Across the Northern and Southern Plains, beef producers hit the hardest by drought are threatened by limited forage resources for cows, which restricts calf growth, resulting in lighter calf weaning weights. In addition, drought can decrease cow body weight and condition, and weaken immune functions that may affect overall health and reproductive performance.

For decades, scientists at the Agricultural Research Service’s Fort Keogh Livestock and Range Research Laboratory (LARRL) in Miles City, Mont., have studied management options that minimize the effects of severe drought on rangeland livestock production. Recently, LARRL animal scientists Richard Waterman, a rangeland nutritionist, and Thomas Geary, a reproductive physiologist, teamed with local ranchers and collaborators at Montana State University (MSU) and the American Simmental Association in Bozeman, Mont., to evaluate early weaning of beef calves and its impact on cow, heifer and steer performance.

“When a calf is weaned early, all nutrients that normally go to milk production for the calf can be retained by the mother — helping to increase or sustain her body weight and condition,” Waterman says.

“Proper handling of early-weaned calves can result in greater weight gain than if they had remained with their mothers, especially during drought.”

Tallying the benefits

Scientists confirmed that weaning a calf earlier than normal potentially offers a beneficial production alternative for beef producers when forage is limited.

“With the calf removed, the cow needs less forage to address her needs, which is especially important during drought,” Waterman says.

“Another issue with drought is the inability to grow enough summer and winter forage for cattle,” says rancher and collaborator Dean Peterson, who volunteered his cow-calf herd in Judith Gap, Mont., for the project. “We used to run 500 cows, but now we run 400, because it’s about maximizing the efficiency of the forage. We suffered an initial loss of income, but we’re doing a better job at taking care of the land and cattle, and our operation is sustainable for the long term.”

Research was conducted using calves from both Judith Gap and LARRL. Some calves
were weaned early, at 80 days of age, while
others were weaned at the more traditional
age of 215 days. Cows that weaned a calf
early weighed more and were in better body
condition at the start of winter. Consequently,
the amount of harvested feedstuffs required
for cows to maintain satisfactory body
weights and condition throughout winter
was reduced.

“We learned a lot,” Peterson says. “The
research confirmed that early weaning is
profitable. If you wean calves early, you have
fewer problems and can better control the
production environment.”

“Early weaning during severe droughts
will reduce economic losses that would occur
when selling lightweight calves,” Waterman
says. “In order to achieve an economic
benefit, a 20% increase in reproductive
performance in the cow herd would need to
be realized, because early-weaned calves must
go on feed much sooner.”

Outcomes of the research also
demonstrated that early weaning increases
the probability of heifers becoming pregnant
on time in the following breeding season,
Waterman says.

“The nice response was in body weight,
especially with those 2-year-olds nursing for
the first time,” he says. “It takes a cow five
years to reach her mature body weight. When
young cows have their calves removed early,
the demands of lactation cease — allowing
the cow to focus her resources on body
condition and growth. If a cow goes into
winter in better condition, maintains that
condition, and calves with better condition
the next year, she will be much more likely to
remain in the herd until maturity.”

The objective is to preserve body
condition of the cow at a time when forages
are limited, says John Paterson, a former
MSU animal science professor and Extension
Service beef cattle specialist. “We don’t want
cows to get thin or pull body condition
down because they’re lactating, which
requires a lot of feed. The way you save that
feed is to stop lactation by getting the calf
weaned earlier.”

**Steering in the right direction**

Additional findings showed that early-
weaned steers reached maturity sooner than
traditionally weaned steers when weight gain,
feedlot performance and carcass traits were
measured. Steers had a higher rate of growth
between the time of early
weaning and the time of normal
weaning.

Early-weaned steers typically
had poorer USDA yield grades,
revealing the importance of
identifying them before they
enter the feedlot, Waterman
says. While producers who
market cattle using a quality
grid will benefit from having a
higher-quality carcass going into
market, research indicates that
management of early-weaned
calves can directly affect how
they are graded at harvest.

“Carcasses of early-weaned
steers may be too fat and receive
less-desirable USDA yield grades compared to
those of traditionally weaned calves of similar
genetics and age when harvested together,”
Waterman says. “If early-weaned steers are
identified before entering the feedlot and
harvested at an earlier age, producers have
the opportunity to market them at more
desirable yield grades with increased quality
premiums for those carcasses.”

Partnering with the University of Illinois,
scientists confirmed this strategy by using
ultrasound to measure carcass characteristics.
Early-weaned steers were then harvested
at a younger age than traditionally weaned
animals to maximize their carcass value.

“This research involved cattle that were
on Montana ranches, so it was the real deal,”
Paterson says. “When you wean earlier and
get those cattle into the feedlot, the quality
and yield are very nice. A lot of ranchers have
figured that out, because it’s an economic
issue as much as anything else.”

Peterson is among those ranchers.

“We went far enough into the study to get
the benefits on the other end,” he says. “We
had better cattle with early weaning because
it helped our quality, too. And because we
retained ownership of all our steers
and heifers until slaughter, we were able to realize
those premiums. We had better carcasses
when we weaned earlier.”

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