

# Developing Heifers

When it comes to management systems, one size does not fit all.

by **Shelby Mettlen**, assistant editor

**A** system only works great in that particular system,” said John Hall, superintendent of the University of Idaho’s Nancy M. Cummings Research, Extension and Education Center in Carmen, Idaho. Hall spoke on the topic of heifer development at the Applied Reproductive Strategies in Beef Cattle (ARSBC) symposium in Manhattan, Kan., Aug. 29-30. He encouraged his audience to concentrate on certain concepts and build their own systems to meet their unique needs.

A heifer needs to calve at 2 years of age; produce a calf every 365 days for eight to 10 years; and provide a calf that is big enough, healthy enough and quality enough that she pays for herself, Hall said. He encouraged producers to “think outside the box” regarding management strategies to help achieve that goal.

Biostimulation is one way to think outside the box, Hall said. Exposing heifers that haven’t begun cycling to a bull can effectively cause onset of puberty.

It’s also important to note that what happens to a dam during pregnancy can affect a heifer calf for the rest of her life, Hall said.

“A pregnant heifer is not the same as an early pregnant heifer,” he said. “What we really need to focus on [are] those heifers calving in the first 21 days of the calving season.”

By the fourth calving season, about half of those heifers will leave the herd, he explained. “Even in heifers that calved in the first 21 days, we’re down to about 30% of those heifers that calved later than that. We really need those heifers to calve early in the breeding season.”



## Stages of weaning

Focusing on preweaning isn’t often a priority, but “it’s a place where we have a lot of potential,” Hall said. Heifers that are heavier at weaning also reach puberty earlier and breed better, he added.

Hall encouraged producers to focus on heifers that are born early in the calving season because their dams are fertile, and to focus on fast-growing heifers because they’re



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likely well-adapted to the environment in which they’re working.

Early-weaned heifers fed high-starch diets 70-150 days have higher pregnancy rates, Hall said. During the critical preweaning phase “we can affect lifetime reproduction by what happens to that heifer,” he said.

The postweaning stage has undergone the most research, Hall said, since it’s the stage during which managers can have the most impact on heifer development.

Between weaning and breeding, heifers need to gain 1.25 pounds (lb.)-1.75 lb. per day to ensure nutrition doesn’t limit the ability to reproduce.

Dividing heavy and lightweight heifers into groups can be beneficial in herds of 300-400 heifers, Hall said. It ensures light heifers

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are eating enough, and heavy heifers’ intakes can be managed more closely.

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“If we do kind of a slow gain, fast gain, we probably need at least 60 days prior to breeding to

bring those heifers along in order to have them ready and where we want them to be in time for the breeding season,” Hall said.

## Nutrients

There is no single specific nutrient to boost reproductive efficiency, Hall said. Fat can have a small advantage but should be administered sparingly and affordably. Overfeeding protein is only expensive, generally not harmful, as long as the animal is consuming enough energy to excrete excess protein in the form of ammonia, he said.

One study suggested heifers developed on range that received 50% of their crude protein in the form of rumen bypass protein had greater longevity in the herd than heifers that received 30% rumen degradable protein, Hall said, but there’s “nothing extremely definitive.”

**Table 1: Impact of pattern of gain on pregnancy rates in replacement beef heifers**

Study	No. of heifers	Pattern of gain			
		Even gain	Slow-fast	Fast-slow	Fast-slow-fast
Clanton et al., 1983	180	82.0%	75.0%	73.0%	—
Lynch et al., 1997	160	87.4%	87.2%	—	—
Poland et al., 1998	96	75.0%	—	—	89.6%
Grings et al., 1999	210	81.8%	—	—	86.6%

We've looked for the magic bullet, Hall said, but it really isn't there. "Design your programs around the feedstuffs you have, what's cheap and available to you, and what meets the needs of the heifer," he said.

Ionophores can offer increased feed efficiency as well as reproductive efficiency, "so they're certainly worth putting in your postweaning heifer diets," he said.

### **Target weight**

"We have a lot of flexibility in how we develop heifers, as long as we reach their target weights," Hall said.

The great 55% vs. 65% of target weight debate continues, but Hall points out that it really depends on what works best for you and your operation.

Developing heifers to 65% of their target weight guarantees that nutrition won't be limiting to a wide variety of cattle, environments and situations, he said.

"If we don't continue to develop those heifers properly, smaller heifers that target 55% prebreeding end up with dystocia problems, probably because they lag behind in size," he said. "Large-framed heifers, because of their growth range, may not work well in that 55%."

Hall pointed out that while fewer heifers raised to a lower target weight were cycling at the beginning of the breeding season, by the end of the breeding season, those heifers experienced no difference in pregnancy rates. In that study, there was also \$22 less cost per pregnant heifer in those systems.

In order for the 55% system to work, heifers need to gain weight from the time the breeding season begins until precalving, and they need to gain it at a greater rate than heifers on the 65% system.

To conclude, Hall advised producers to select early-born replacements, monitor preweaning environment, choose a target weight system that works for your operation, develop a postweaning nutritional plan that utilizes feedstuffs available to you, feed the cow for the environment and use reproductive technologies.

To listen to Hall's presentation or to view his PowerPoint, visit the Newsroom at [www.appliedreprostrategies.com](http://www.appliedreprostrategies.com). Compiled by the *Angus Journal* editorial team, the site is made possible through sponsorship by the Beef Reproduction Task Force. To access video of the presentations, visit the Beef Reproduction Task Force page on Facebook.

The 2017 ARSBC Symposium was hosted by the Task Force and Kansas State University Research & Extension. Next year's symposium will be Aug. 29-30 in Ruidoso, N.M.

