

CONDITIONED FOR CONCEPTION

Give your heifers the best of everything – reproduction efficiency, health and nutrition

By Jerilyn Johnson-Houghton

If you're serious about genetic improvement, your replacement heifers should be among the most valuable animals on the farm. A few important steps can help you make sure they're bred on time and set up for a long, productive life as a brood cow.

Here are 10 ways to get more from your replacement heifers.

1. Home on the mid-range

Avoiding large differences in age and size will protect against variations in maturity level. "It's usually better not to keep extremes on either end," says University of Wyoming extension beef specialist Doug Hixon. "Those that are too small may have trouble reaching puberty, and those that are too big may have too much frame as mature cows and have too much body weight to maintain."

Wolf Creek Angus Ranch, Luray, Kan., regularly gets 85 to 90 percent A.I. conception on replacement heifers. One of the first steps for the ranch is to choose replacements from the mid-range of the weaning group. "We usually sell any small, low-performing heifer calves at weaning time," says owner Mary Ferguson. "We develop the larger framed heifers, but market them as bred heifers the following fall."

On the other hand, choosing the larger heifer calves at weaning isn't all bad according to Ohio State University researchers. The heavier heifers probably are older, so they are out of early calving cows. Therefore, heifers from the earlier calving cows are from the more fertile more productive cows in many cases. The heaviest, oldest heifers are likely to cycle and breed early.

Bottom line is choose replacement heifers out of the top two-thirds of the weaning group but be careful of the extreme individuals.

2. Choose by sire

Stephen Boyles, OSU extension beef specialist, suggests that the best way to produce heifers that elevate the cowherd to higher productivity be not through the direct selection of replacement heifers, but through careful sire selection. Ironically, one trait that correlates to improved reproduction in heifers is scrotal circumference.

Sires with larger scrotal circumference tend to produce heifers that reach puberty more quickly. One additional centimeter in scrotal circumference can reduce age at puberty by as much as 10 days.

Scrotal circumference is only one trait to consider, it is important to look at the entire genetic package that the bull contributes. The genes that he introduces into a cowherd will be with that herd for several generations.

3. Don't skimp on shots

Preconditioning for replacement heifers includes a comprehensive health management plan. Larry Olson, Clemson University extension animal scientist, Blackville, S.C., has developed such a health plan for developing heifers at the Edisto Research and Education Center.

The first day of weaning in September kicks off a 42-day preconditioning program. The vaccinations include brucellosis, IBR, PI3, BVD and BRSV shots, along with a 5-way leptospirosis, 7-way clostridial and *Pasturella haemolytica* injections.

The program also includes treating for flies, grubs and lice, as well as deworming. Often overlooked, deworming has been identified in a number of research studies as a way to help keep heifers more uniform in their body score.

4. Implants and ionophores

To implant or not to implant potential replacement heifers is a question that producers will want to discuss with their veterinarian and nutrition consultants. One implant is cleared for use in replacement females, and it should be used in calves less than 45 days old. Because some implants can reduce fertility in heifers, producers should always check on whether implants were used when buying replacement heifers.

"Potential replacement heifers should never be implanted at birth or at weaning, and should never receive multiple implants," says Wyoming's Hixon.

Ionophores can be safely included in the mineral mix for additional feed efficiency and more weight gain, which may result in earlier puberty.

5. Breed ahead of the herd

Another key management decision needs to be made well ahead of breeding time. Scheduling a target calving date for heifers drives many of the decisions you need to make about feeding and managing replacements. The time of calving may have a big impact on the heifer's lifetime productivity in the herd.

"Heifers should be bred to calve three to four weeks before the main cowherd," says Hixon. "This allows a longer post-partum period for heifers to recover and be ready to breed back on the same schedule as the older cows." Remember that heifers tend to have a shorter gestation length than cows and most calving ease sires also tend to have shorter gestations. Breeding the heifers three weeks ahead of the cows will result in some heifers calving as early as 5 weeks ahead of the cows. Adjust your breeding dates accordingly.

Hixon suggests that the heifer breeding season be kept short, over a 35- to 45-day season.

6. Target your heifers

Because heifers are being asked to do more at a younger age than ever before, the nutrition program during the growing phase is more critical than ever. Depending on feedstuffs available, producers across the nation have different approaches to nutrition. Still, they pursue the same goal - get heifers to grow, but don't get them fat.

"The best approach is to use a Target Weight system," according to ABS District Sales Manager, Rick Hardin. Heifers of various breeds and breed types have certain target weights to reach puberty or sexual maturity. "The general rule of thumb is that heifers should weigh about two-thirds of their mature weight at the beginning of the breeding season," adds Hardin. An easy estimate of this weight in your cowherd is to take the average of several cull cow weigh tickets from the sale barn. This will give you an estimate of the mature weight of your cowherd. You can then take 2/3 of this mature cow weight to get the Target Weight for your heifers. The next step is to subtract the average of the heifers weaning weight from this Target Weight to find out how much the heifers should gain from weaning to the start of breeding. You can divide that needed weight gain by the number of days and find the ADG that is required in your situation to get the heifers cycling by the start of the breeding season.

In Kansas, Mary Ferguson faces a limited amount of native grass, so heifers are developed in a dry lot. Her average daily gain goal is 1.5 lbs./head. She works them up to approximately 6 to 8 lbs. per head per day of cracked corn along with free-choice hay. The hay is a ground mixture of about one-third alfalfa and two-thirds grass hay of average quality. Ferguson also provides a mineral supplement, which includes copper. "That's a trace element that is deficient in many forages in central Kansas," she says, "and one essential for reproductive health."

Also important is to constantly monitor body condition score. An ideal score for replacement heifers is 6. Try to keep the heifers from getting over a body condition score of 7 and make sure that they are all at least in the 5 body condition score.

7. Feed some fat

With all the concern about getting heifers too fat, it seems contradictory to suggest that producers actually feed supplemental fat. But it's true - research shows a possible boost to subsequent reproductive efficiency for heifers receiving some (about 0.5 pounds per head daily) vegetable fat in their ration prior to delivering their first calf.

A study at the Fort Keogh Livestock and Range Research Laboratory in Miles City, Mont., shows that supplemental fat can help boost first-service conception in first-calf heifers. Scientists studied performance of heifers that were fed a diet with a total of 5.2 percent fat for 55 days prior to delivering their first calf. The vegetable-oil supplement was discontinued at calving. As those heifers were rebred, 76 percent were settled within a 50-day A.I. mating period, as opposed to 57

percent of heifers receiving no fat supplement. A study from the University of Wyoming compared 0%, 3% and 6% supplemental fat. This research found the 3% fat level to be the ideal level of the three. The 6% level reduced forage intake and digestibility. Performance data were similar but began to slide down at the 6% level. The 3% level would calculate to about 0.5 pounds of fat per head daily.

Researchers in Texas have demonstrated similar effects on reproductive traits by feeding whole cottonseed.

8. Make sure heifers are cycling

All of the points above are targeted toward one goal - having as many heifers cycling at the start of the breeding season as possible. The first thing that has to happen before a heifer can become pregnant is she has to reach puberty and come into heat.

Take some time to observe heifers as they are being developed by actually walking or riding through them. If all heifers are cycling you should observe about 5% of them in heat per day. There is a side benefit of walking or riding through the heifers during the development phase that will pay off during the breeding phase. Getting them used to the manner in which they will be handled during heat detection should make them quieter and easier to handle.

9. Synchronize your estrus watch

Estrus synchronization is a very valuable tool to use in replacement heifer management. Synchronization enables you to condense labor resources at breeding and calving as well as keep the breeding and subsequent calving season tight and on schedule. Synchronization combined with the use of proven calving ease sires through A.I. enables you to significantly reduce calving difficulty without sacrificing performance.

There are several synchronization options available for heifers. For more information on specific synchronization protocols, go to the ABS Global website at www.absglobal.com or ask your ABS Representative for recommendations based on your particular program and needs.

10. Take time to plan

Make sure that estrus synchronization supplies are ordered and ready to use in advance of the time they are actually needed. Develop a calendar that shows what needs to be done each day of the synchronization and A.I. period. Make sure that semen and breeding supplies are ordered and on hand and that any additional help is scheduled if needed.

Taking these few important steps will protect your replacement heifer investment. The benefits will be long lasting as she matures into a reliable, productive female for years to come. 🐮