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# **COW/CALF CORNER**

## **The Newsletter**

**From the Oklahoma Cooperative Extension Service**

**June 11, 2010**

**In this Issue:**

### **Heat Stress Can Reduce Pregnancy Rates**

Glenn Selk, Oklahoma State University Extension Cattle Reproduction Specialist

### **"Preg" Check and Cull Replacement Heifers Early**

By Glenn Selk, Oklahoma State University Extension Cattle Reproduction Specialist

## **Heat Stress Can Reduce Pregnancy Rates**

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The effects of heat stress on reproductive performance of beef cows has been discussed by many animal scientists in a variety of ways. After reviewing the scientific literature available up to 1979, one scientist wrote that the most serious seasonal variation in reproductive performance was associated with high ambient temperatures and humidity. He further pointed out that pregnancy rates and subsequent calving rates were reduced in cows bred in July through September.

Typical Oklahoma summer weather can fit the description of potential heat stress, where many days in a row can exceed 95 degrees and night time lows are often close to 80 degrees. Many hours of the day can be quite hot and cause the slightest rise in body temperature of cattle. Research conducted several years ago at OSU illustrated the possible impact of heat stress of beef cows on their reproductive capability. These cows were exposed to bulls as one group (while in a thermoneutral environment) and one week later exposed to the environmental treatments listed below in Table 1.

**Table 1. Effects of Imposed Heat Stress on Reproduction in Beef Cows**  
[\(Biggers, 1986;OSU\)](#)

	Control	Moderate Heat Stress	Severe Heat Stress
Day time temp (F.)	71	97	98
Night time temp (F.)	71	91	91
Relative humidity (%)	43	27	38
Rectal temp (F.)	102.0	102.7	103.6
Pregnancy (%)	83	64	50
Conceptus wt (g)	0.158	0.111	.073

They found that heat stress of beef cows from day 8 through day 16 affected the weights of the conceptus (embryo, fluids, and membranes) and the increased body temperature may have formed an unfavorable environment for embryo survival. As noted in table 1, the **percentage of pregnancies maintained throughout the week of severe heat stress was considerably reduced.**

Florida scientists studying dairy cows reported that for high conception rates the temperature at insemination and the day after insemination was critical to success. They stated that the optimal temperature range was between 50 degrees F. and 73 degrees F. Marked declines in conception occurred when temperatures did not fall in this range.

Beef producers conducting Artificial Insemination or Embryo Transfer may want to take heed of this information. Make certain that cows are allowed access to shade and adequate air movement, at breeding, and immediately following breeding. Of course, adequate cool water is important anytime during the summer months. Avoid forcing recently inseminated cows to stand in treeless, drylot situations where relief from the Oklahoma heat is impossible.

## **"Preg" Check and Cull Replacement Heifers Early**

By Glenn Selk, Oklahoma State University Extension Cattle Reproduction Specialist

Many Oklahoma ranchers choose to breed the replacement heifers about a month ahead of the mature cows in the herd. In addition, they like to use a shortened 45 to 60-day breeding season for the replacement heifers. The next logical step is to determine which of these heifers failed to conceive in their first breeding season. This is more important today than ever before.

As the bulls are being removed from the replacement heifers, this would be an ideal time to call and make arrangements with your local veterinarian to have those heifers evaluated for pregnancy in about 60 days. In two months, experienced palpators should have no difficulty identifying which heifers are pregnant and which heifers are not pregnant (open). Those heifers that are determined to be "open" after this breeding season, should be strong candidates for culling. Culling these heifers immediately after pregnancy checking serves three very economically valuable purposes.

1) Identifying and culling open heifers early will **remove sub-fertile females from the herd**. Lifetime cow studies from Montana indicated that properly developed heifers that were exposed to fertile bulls, but DID NOT become pregnant were often sub-fertile compared to the heifers that did conceive. In fact, when the heifers that failed to breed in the first breeding season were followed throughout their lifetimes, they averaged a 55% yearly calf crop. Despite the fact that reproduction is not a highly heritable trait, it also makes sense to remove this genetic material from the herd so as to not proliferate females that are difficult to get bred.

2) Culling open heifers early **will reduce summer forage and winter costs**. If the rancher waits until next spring to find out which heifers do not calve, the pasture use and winter feed expense will still be lost and there will be no calf to eventually help pay the bills. This is money that can better be spent in properly feeding cows that are pregnant and will be producing a salable product the following fall.

3) Identifying the open heifers shortly after (60 days) the breeding season is over will **allow for marketing the heifers while still young** enough to go to a feedlot and be fed for the choice beef market. The grading change of several years ago has a great impact on the merchandising of culled replacement heifers. "B" maturity carcasses (those estimated to be 30 months of age or older) are very unlikely to be graded Choice and cannot be graded Select. As a result, the heifers that are close to two years of age will suffer a price discount. Currently non-pregnant, yearling 875 pound heifers (shortly after a breeding season) are selling for about \$91 per cwt (Oklahoma National Stockyards). Therefore an 875 pound, culled replacement heifer is worth about \$796. Non-pregnant two-year old cows are selling for about \$65 to \$70 per cwt. Open two-year old cows (those that could have been identified shortly after the breeding season) that weigh 1000 pounds would only sell for about \$700 next spring.

The average expense for owning the cow is about \$1 per day. So the total loss of keeping the open heifer would be about \$200 in feed and forage and another \$91 in lost value. **The grand total expense for not culling open replacement heifers in today's market is about \$291 per head**. Therefore, it is imperative to send open cull heifers to the feedlot while they are young enough to be fed for 4 to 5 months and not be near the "B" maturity age group.

**Certainly the percentage of open heifers will vary from ranch to ranch. Do not be concerned, if after a good heifer development program and adequate breeding season, that you find that 10% of the heifers still are not bred. These are the very heifers that you want to identify early and remove from the herd. It just makes good economic business sense to identify and cull non-pregnant replacement heifers as soon as possible.**

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