

Pregnancy Loss in Beef Cattle

The Virginia Experience

During recent years the cost of keeping a cow calf pair have increased sharply. Current estimates of the annual cow-calf costs are estimated to be \$600-\$800¹. Winter feed costs account for 40%-60% of the total costs². Open cows represent a substantial cost to a cattle operation. Removing open cows from a cow herd at weaning can reduce the total expenses in a cattle herd by decreasing overall feed costs. Cows can be open for one of two reasons. The first reason is that they never become pregnant. The second reason is that they become pregnant and then lose the pregnancy at a later date. There are many cow and bull factors that affect whether or not a cow becomes pregnant. The focus of this paper is on pregnancy loss.

Pregnancy can be diagnosed reliably as early as 30-40 days via ultrasound or rectal palpation. A certain amount of pregnancy loss can be considered normal. Historically beef cows have most commonly had their pregnancy diagnosis performed around the time of calf weaning. These cows would be 3-6 months pregnant when they were pregnancy checked. Recently producers have become more likely to have veterinarians perform pregnancy diagnosis early. The earlier pregnancy diagnosis is performed the more “normal” losses that can be expected. Pregnancy losses in dairy cattle have been well documented. Normal levels of pregnancy losses have not been well established in beef cattle. Most beef cattle herds in Virginia calve in either the spring or the fall. There are well documented differences between spring and fall calving cows. Calves born in the fall are heavier than those born in the spring³.

Fall Pregnancy Loss

To establish normal fall pregnancy losses in the Mid-Atlantic region the herds of the Virginia Department of Corrections were used. These herds are located across the state and represent about 1000 spring and 1000 fall calving cows spread amongst 12 main farms. These herd are vaccinated annually with a modified live viral vaccine (IBR-BVD-PI3-BRSV) and twice annually with a 5-way Lepto vaccine. Fall cows

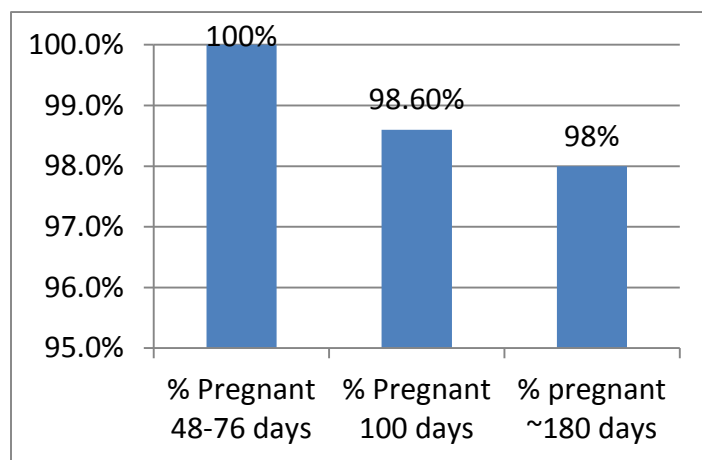


Figure 1 Pregnancy losses in beef cows Fall 2013 Pregnancy Diagnosed 3 times Cows=353

from the 2012 breeding season (Fall 2013 calving season) were pregnancy checked 2 or 3 times to document pregnancy losses. Figure 1 shows the pregnancy losses for those cows that were diagnosed pregnant to

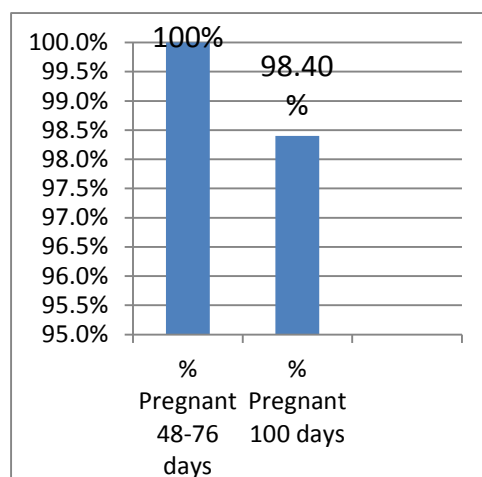


Figure 2 Pregnancy losses in beef cows Fall 2013 Pregnancy Diagnosed 2 times Cows=559

artificial insemination and palpated 3 times. Figure 2 shows those cows that were diagnosed pregnant and palpated at least 2 times for pregnancy. These cows are currently calving so we do not yet have last trimester pregnancy losses.

The pregnancy loss from first pregnancy diagnosis to second pregnancy diagnosis was 1.5%. From the second pregnancy diagnosis to the third Pregnancy diagnosis the loss was 0.6%. This level of losses is significantly less than that found in dairy cattle⁴. Beef cattle appear to follow the same trend as dairy cattle that losses occur at a lower rate as a cow progress through gestation. No common reproductive diseases are believed to be present in these herds and their nutritional management is similar to most beef cows herds in the Mid-Atlantic. A certain level of pregnancy loss can be expected to occur from natural sources. These numbers appear to be a reasonable number of losses for a producer to expect in their herds without significant problems.

Producers can use these numbers to help evaluate if their herd is meeting expectations for pregnancy losses. The other important decision that producers need to make is the timing of pregnancy diagnosis. The earlier that cows are pregnancy checked the more accurate a veterinarian can be in determining the breeding date. Producers that are using a single round of artificial insemination then turn a bull in with the herd for balance of the breeding season often like to know the success of the AI program prior to calving. In other cases producers may make management decisions like sorting cows into groups based on breeding dates. In order to be able to accurately determine breeding dates these herds will need to pregnancy checked as soon as possible after the bull comes out. For most veterinarians this will be 30-40 days after the bull is removed from the breeding herd. From a culling perspective it is not important to know the pregnancy status of the cow until the calf is weaned. Delaying pregnancy diagnosis until weaning will decrease the number of open cows that are kept that have suffered pregnancy losses by 1 cow per 200 cows in a typical herd. Producers should make the decision on the timing of pregnancy diagnosis based on the management of their herd. If no management decisions are going to be made based on breeding date then delaying pregnancy diagnosis until weaning will minimize the number of cows that are kept that have suffered pregnancy losses. Producers who have pregnancy diagnosis performed early should expect to have a slightly greater percentage pregnancy loss.

Pregnancy Losses in Virginia Fall 2012

In the fall of 2012 producers from multiple areas in the state of Virginia reported multiple pregnancy loss problems occurring at higher than normal rates. These problems consisted of cows diagnosed pregnant not calving, still births, and small calves. In order evaluate the extent of the problem and look at potential causes a survey was distributed to producers and to collect data. The goal of the survey was to evaluate the extent of the problem and pursue potential causes. Experts from around the state and country were also consulted for input. Only eight herds returned surveys with usable data. The herds that provided data had 92% live calvings (1068/1159). Four of the herds had less than 94% live calves born and 4 of the herds had greater than 94% of calves born alive. Problems were different for every

herd with some herds suffering apparent abortions. Other herds had still born calves and still others had weak, small calves. No definitive cause of the problems could be determined. Several management changes have occurred in recent years. Fall calving season for many producers occurs much earlier than it historically has. Many progressive producers now start their fall calving season mid to late August. Many producers are participating in environmental programs to fence out water sources. These two procedures have the potential to significantly change the heat exposure of the cows in the last trimester of pregnancy. The summer of 2012 had higher than normal temperatures. All of these herds were grazing endophyte infected fescue which raises a cow's core body temperature. While we do not know for sure the cause of these problems it is believed a unique combination of very early fall calving, lack of shade, hot temperatures, and grazing fescue contributed to these problems. The multi-factoral causes mean that the problem will probably occur practically when this combination of factors occur again. To try an prevent this happening producers should evaluate the timing of the calving season and make sure cows in the last trimester have adequate access to shade. Where it is not possible to change these factors producers should consider management options to reduce their cows exposure to ednophyte infected fescue in the last 30-60 days of gestation.

Spring Calving

There are two main differences in spring herds versus fall herds. Spring herd are typically fed stored feeds during the last trimester of pregnancy and during calving. Spring born calves are also heavier than fall born calves with the same genetics and nutrition. The same pregnancy loss data is being collected

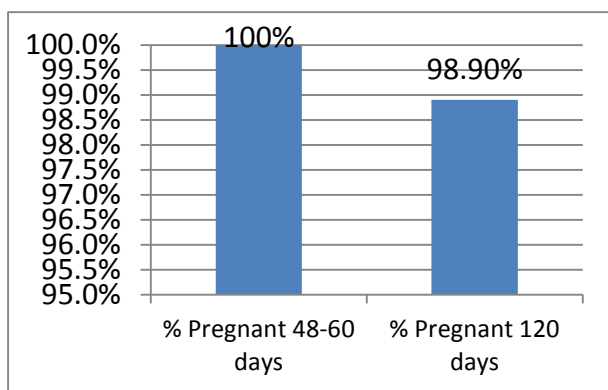


Figure 3 Pregnancy losses from Spring 2013 breeding season Cows=549

for spring calving herds as fall calving herds. Virginia Department of Corrections herds from around the state of Virginia are being used for this information as well. Currently all of these cows have been pregnancy checked twice. The first time was around 60 days of pregnancy and around 120 days of pregnancy. The pregnancy loss incurred by the spring cows was 1.1%. This number was almost identical to the fall herds

Spring 2013 Pregnancy Loss

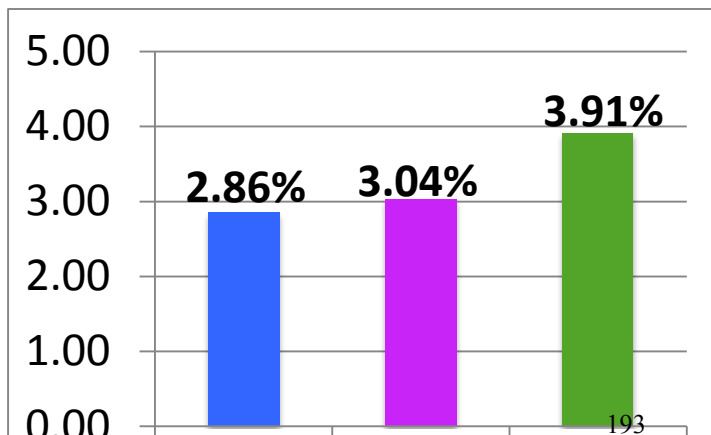


Figure 4 Spring 2013 calf losses Cows=1085 diagnosed pregnant

The weather in late winter and early spring 2013 provided difficult conditions for spring calving producers. The weather was cold and wet. There were reports of higher than normal losses from pregnancy through the neonatal period. The Virginia

Department of Corrections had 1085 cows and heifers that were diagnosed pregnant in the Spring 2012 breeding season to calf during the Spring 2013 calving season. Figure 4 shows the pregnancy losses, calf losses at birth, and neonatal losses in the first 30 days of life. The gestational losses appear higher than those discussed above but it must be remembered that these losses cover the entire gestational period from initial pregnancy diagnosis to calving. In these herds total pregnancy losses were 2.86% of diagnosed pregnant cows. Larger losses occurred at calving and post calving. Given that these losses accounted for 70 percent of the cows that did not raise a live calf this area is the most important area to make changes on most farms

Pregnancy loss is expensive for producers. The out of pocket costs associated with pregnancy loss are the cost of keeping these cows from weaning till the cow is known to be open and sold. These expenses will be greater for spring calving herds than for fall calving herds. Hay feeding costs for spring calving will run from \$1.50-\$2.00 per cow per day. Fall calving cows will be grazing during this period of time so their feed cost will be less. The opportunity cost of lost profit from the calf will vary significantly between farms. To know where pregnancy losses are a problem in your herd you must have good records. A defined breeding season and having cows pregnancy diagnosed are also key components to knowing if your pregnancy losses are within acceptable norms. When determining the ideal time to perform pregnancy diagnosis you should discuss your goals with your veterinarian. Based on the above data the number of cows diagnosed pregnant at calf weaning and failing to calve should be around 1%. Herds that perform pregnancy diagnosis early should expect a higher number of cows to turn up open after pregnancy diagnosis (2-3% depending on how early pregnancy diagnosis is performed). There are also questions about the chances that palpation for pregnancy diagnosis causing pregnancy losses. All of the cows in this data set were palpated by an experienced clinician and a veterinary student every time pregnancy was diagnosed. The low level of losses experienced in these cows combined with other research⁵ would suggest that rectal palpation was not an important cause of pregnancy loss in beef cattle.

1. Livestock Marketing Information Center March 2011
2. USDA Economic Research Service 2010
3. Coburn et al 1996 Nebraska Beef Cattle Reports
4. Santos et al 2004 Animal reproductive Sciences
5. Romano et al JAVMA 2011