

Ross Mosteller  
District Extension Agent, Livestock & Natural Resources

## **Manage to Minimize Early Pregnancy Loss**

Recently I had a conversation with some good friends on timing of hauling cattle after AI. There is an early window where stress can result in embryonic losses. Let's look today at what these stresses can be and give thought to management approaches which may minimize this loss. Dr. Rick Rasby, Nebraska Extension, discussed this topic in an article, and it serves as the basis for this discussion today.

Stress during early pregnancy is well documented to cause embryonic death and loss of pregnancy. However, making strategic management decisions during the fragile 2 months after breeding can help minimize those losses. Key management practices to review to minimize early pregnancy loss are transportation, temperature while worked or transported, pregnancy diagnosis, and nutrition.

It is important to plan transportation, or other stressors, strategically to prevent early pregnancy loss and reducing overall pregnancy rates. Research conducted at Colorado State University has found that transporting cattle between days 5 and 42 post insemination can result in a 10% reduction in pregnancy. When loaded and transported, cattle may become stressed and release a cascade of hormones that can alter the uterine environment making it less ideal for supporting pregnancy.

Prior to day 5, the embryo is still in the oviduct and protected from changes in the uterine environment. After day 42, the embryo has implanted into the uterine wall and is less susceptible to changes in environment. Transporting on days 5 to 42 pose the greatest risk, waiting to haul cows and heifers until a week or two after day 42 may help prevent late embryonic loss.

Another key to minimizing pregnancy loss when transportation is necessary is to avoid hauling cows on excessively hot days (approximately 90° - 110° and 40% humidity or more). Research conducted at Oklahoma State University found that cows exposed to heat stress 8 – 16 days after breeding, had decreased progesterone concentration, increased prostaglandin concentrations, and reduced embryonic weights. Planning to haul cows on days with more moderate temperatures can help reduce stress and ultimately prevent early pregnancy loss.

Research conducted at Colorado State University found that transrectal palpation to diagnose pregnancy between days 42 - 74 had greater fetal losses (2.68 vs 1.38%) than transrectal ultrasound. It was also found that heifers evaluated prior to 53 days had nearly a 3 fold increase in pregnancy loss than those evaluated after 53 days of pregnancy (3.46 vs 1.26%). Pregnancy diagnosis prior to 40-50 days of pregnancy carries an increased risk of disturbing those fragile early stages of development, especially with inexperienced technicians.

It is well established that deficiencies in protein and energy at breeding time have detrimental effects on fertility. It is recommended that cows should be at a minimum BCS of 5 and first calf heifers should be at a BCS of 6 at calving for optimal reproductive performance. Managing cows and heifers to be on a positive plane of nutrition at the time of breeding is essential to establish pregnancy. Having a sound nutritional program is key to optimizing reproductive function during the breeding season.