Improving Reproduction In Your Dairy Herd

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Reproduction plays a crucial role in the profitability and sustainability of a dairy farm. Finding ways to improve the reproduction of a herd can be challenging because there are many variables that can affect a cow's ability to get pregnant. The waiting period before first service, ability to accurately detect heats, cow comfort, nutrition and the presence of mycotoxins in the feed are all factors that need to be evaluated when looking to improve the reproductive performance of your dairy herd.

One of the first factors to consider is the waiting period before the first service. Today's industry normal waiting period is 70-75 days in milk (DIM). A study conducted by Dr. Julio Giordano at Cornell University, compared waiting periods of 60 DIM to 88 DIM at the time of the first service. The study showed that 1st lactation dairy cows that waited until 88 DIM for their first service had increased conception rates of 8.7%. In 2nd lactation (and older) cows, an increased conception rate of 3.5% was observed. The longer DIM also showed cows with better body condition scores and less endometritis at the time of the first service[1]. This study shows that giving cows extra DIM before the first service could increase the conception rate of a herd.

Heat detection methods are another factor to consider when looking at a herd's reproduction program. A standing heat is the most accurate sign of estrus. A true, standing heat means a cow will stand to be mounted. If the cow is trying to walk away, this is not a standing heat. A standing heat will normally last for 15 to 18 hours but estrus duration may last anywhere from 8 to 30 hours. In order to easily monitor standing heats, cows must be able to interact with each other and should be observed multiple times a day. Secondary estrus signs include mucus discharge, restlessness, rubbed tail head hair, decreased feed intake or decreased milk production[2]. Good heat detection can make a huge impact on a herd's conception rates.

Achieving pregnancy is only half the battle. Even if an egg is fertilized, the pregnancy may still be lost. Early embryonic death can occur between fertilization and day 42 of gestation. Approximately 80% of early embryonic death occurs before day 17, 10-15% occurs between

day 17 and day 42 and 5% occurs after day 42. Early embryonic death usually shows no sign of the lost embryo[3]. Genetic influences, nutrition, or even environmental stress factors can contribute to early embryonic death. Providing cow comfort and reducing stress all contribute to the animal's well-being and help reduce early embryonic death rates. It is important that cows have the proper amount of individual bunk space and that their feed is pushed up regularly. Cow comfort including ventilation, bedding, and stocking density should also be monitored as part of a farm assessment when determining reproductive status of the herd.

Having a properly balanced dry cow ration will help ensure cows have the nutrients needed to achieve their potential for milk production and reach their optimal conception rates. Nutrition plays a crucial role in a herd's reproduction capabilities. Trace minerals and fat-soluble vitamins, specifically vitamin E, have been linked to decreasing fresh cow problems such as retained placentas and mastitis. Less fresh cow problems lead to timely breeding and earlier confirmed pregnancies.

Last, but not least, is determining whether or not mycotoxins are present in the feedstuffs. Mycotoxins can compromise reproductive function and cow health. Many molds and mycotoxins are estrogenic and may disrupt normal ovary function. Testing for mycotoxins in feeds is an important tool producers can use to determine if mycotoxins are a detrimental factor to their herd's reproduction rates. Using a mycotoxin binder such as Fuse 207™ can reduce the effects of mycotoxins. Reproduction issues are only one of multiple complications of mycotoxins in feeds.

As you can see, reproduction function can be tied to many different factors. Taking the time to analyze some of the topics mentioned in this article may help increase conception rates and overall reproductive function in your dairy herd. Fine tuning your herd's reproductive health will positively affect the profitability and sustainability of your operation. Our knowledgeable livestock specialists and nutritionists are available to answer any questions you may have to improve reproduction in your dairy herd.

[1] Coffeen, Peggy, "Study of Longer Voluntary Waiting Periods", October 2016, Progressive Dairyman.

[2] Penn State College of Agricultural Sciences, "Heat Detection and Timing of Insemination for Cattle", November 2017, Extension Circular 402.

[3] Penn State College of Agricultural Sciences, "Causes of Embryonic Mortality in Cattle", August 2006, Department of Animal Science News.