

## De-Mythifying the Anovular Cow

The anovular cow is often one of the most misunderstood animals on a dairy. Part of that confusion stems from how people define these animals—the terms anovulation and anestrus are often used interchangeably. But these conditions are really very different in cause and solution.

Anestrus is the failure of cows to exhibit overt estrus. Experts suggest anestrus is more commonly a problem with heat detection than an actual failure to show signs of heat.<sup>1</sup> Short estrous cycles, poor footing and dairy management decisions can all impact heat detection success and inaccurately determine that cows are anestrus when in fact they are not.

Anovulation, on the other hand, is the failure of cows to ovulate. These animals have abnormal follicular development and abnormal estrous cycles. This condition may or may not be associated with follicular cysts—remember, not all anovular cows are cystic but cystic cows are anovular. Treatment requires more than improved heat detection.

In addition, several myths surround anovular cows, none of which help dairies and their management teams address this serious fertility challenge.

Following are several of these myths and the truths that debunk them.

### MYTH #1: ANOVULATION IS NOT AN ISSUE IN OUR HERD

**Truth:** Several research studies involving multiple dairy herds have estimated the incidence of anovulator cows in the U.S. dairy herd. Based on elevated serum concentrations of progesterone examined during the latter part of the voluntary waiting period (50 to 60 days in milk), as many as 20% of first-lactation and 10% to 15% of older cows may not be cycling, explains Dr. Jeff Stevenson, Kansas State University animal science professor.

Anecdotally, individual herds experience anovulation levels higher or lower than these findings, but no herd is immune from the condition.

However, don't put more emphasis on anovulation than what it deserves, cautions Julio Giordano, Cornell University assistant professor of dairy cattle biology and management. "It can be easy to overemphasize anovulation," he says, "especially since cystic cows fall under this umbrella."

Work with your veterinarian to accurately determine the level of anovulation that occurs in your herd. Tools like blood or milk progesterone tests, as well as ultrasound results, enable you and your team to set specific herd benchmarks and goals for managing this condition as necessary.

### MYTH #2: I CANNOT DO MUCH ABOUT ANOVULATOR COWS ON MY DAIRY

**Truth:** Several strategies can help reverse the anovular condition, including a number of timed-artificial inseminations (A.I.). "The protocols we have now can really help dairy producers deal with anovular cows," says Paul Fricke, University of Wisconsin extension dairy reproductive specialist.

Protocols like Presynch/Ovsynch®, G6G, Double Ovsynch and Ovsynch with a CIDR® have all been shown to improve reproductive performance in anovular cows.

Keep in mind the use of prostaglandin alone does not help since this tool simply regresses the *corpus luteum* (CL), which anovular cows do not have, says Giordano. Protocols—like those listed above—include doses of GnRH, which greatly improve the odds of success.

“Research<sup>2</sup> at the University of Florida demonstrated that cows without a CL or those with low progesterone before initiating a timed-A.I. protocol can be identified by an ultrasound exam and successfully treated to improve fertility,” says Stevenson.

Results showed that supplementing progesterone with two CIDRs in cows without a CL on day 8 before breeding increased progesterone concentrations and restored pregnancy rates similar to that of cows that had a CL when enrolled in the study (47% for cows that received the CIDR treatment vs. 50% for cows with a CL).

### MYTH #3: COWS WITH LOW BODY CONDITION SCORE (BCS) ARE ANOVULAR

**Truth:** While it is not uncommon for anovular cows to have a lower BCS, don’t assume cows with normal BCS are not impacted by anovulation. In fact, if you delve into the numbers, more cows with normal BCS are anovular than cows with lower BCS.<sup>3</sup>

For example, a 2006 research study at the University of Wisconsin shows that while 33% of anovular cows had BCS of 2.5 or less, 66% of anovular cows had normal BCS (2.75 to 3.25). “This stands to reason because you have (or should have) more cows with a normal BCS than low BCS,” explains Giordano.

### MYTH #4: HIGH PRODUCING COWS ARE ANOVULAR

**Truth:** In reality, there is no relationship between milk production and anovular conditions. “We’ve looked for a link between the two, but have been unable to find conclusive evidence that high production increases anovulation,” says Fricke. “Incidence is consistent across production levels.”

Instead, research<sup>4</sup> shows risk factors include:

- Uterine inflammation
- Energy balance (higher blood NEFA concentrations before and after calving)
- Parity
- Season

Therefore, if anovulation is a concern in your herd, focus on factors you can control, like providing proper nutrition and improving management decisions that positively impact transition cow health. This will help you set animals up for a successful lactation and improved reproductive performance.

1 Johnson WH. Managing Anovulation and Cystic Ovaries in Dairy Cows, In *Proceedings*, WCDS Advances in Dairy Technology, Vol. 20; 2008;311-326.

2 Bisinotto RS, Ribeiro ES, Lima FS, Martinez N, Greco LF, Barbosa LFSP, Bueno PP, Scagion LFS, Thatcher WW, Santos JEP. Targeted progesterone supplementation improves fertility in lactating dairy cows without a *corpus luteum* at the initiation of the timed artificial insemination protocol. *J Dairy Sci* 2013;96:2214-2225.

3 Bamber et al. Genetic parameters for anovulation and pregnancy loss in dairy cattle. *J Dairy Sci* 2009;92:5739-5753.

4 Dubuc J, Duffield TF, Leslie KE, Walton JS, LeBlanc SJ. Risk factors and effects of postpartum anovulation in dairy cows. *J Dairy Sci* 2012;95:1845-1854.