

CONSULTANT'S DIGEST

Reproducing Great Body Condition

Whether too fat or too skinny, cows with poor body condition suffer from a variety of ailments. The aim is to maintain a moderate amount of flesh for good health... and for reproductive efficiency. Here's how body condition affects reproduction and how cows fed a palatable energy dense ration can improve it.

High-producing dairy cows typically experience a period of negative energy balance (EBAL) during early lactation due to increasing milk production and insufficient dry matter intake. Improvement in EBAL from its most negative point in early lactation toward a positive state provides an important signal for initiation of ovarian activity.³ Energy balance and number of days to the lowest point of negative EBAL have been correlated with interval to first ovulation postpartum.^{1,2,4,5,9} However, EBAL is difficult to measure on-farm. As a result, body condition score (BCS) and the change in BCS (which reflects lost or gained body condition) are considered the practical, on-farm measurements of energy status in dairy cows. These measures correlate with future reproductive performance.

Between 20 to 30 percent of postpartum cows are not cycling and have what is called anovular condition between 50 and 75 days in milk.^{6,8} As shown in Figure 1, cows with a lower BCS have a greater likelihood of being anovular.⁸ Note that the relationship between anovular condition and BCS is similar in both primiparous [first calf] and multiparous [second calf or more] cows.

Future reproductive success is related to early-lactation cyclicity – regardless of whether cows are anovular or not. Researchers at the University of Wisconsin reported that conception rates were 3x lower and pregnancy rates were 5x lower for cows that had been anovular compared with ovular cows⁸ (Figure 2). Therefore, one way to improve reproductive success in early lactation is to keep cows carrying moderate body condition in early lactation. At a recommended BCS of ≥ 3.25 on a scale of 1 to 5, cows are more likely to be ovular and have greater reproductive efficiency.

Loss in BCS in early lactation also has been related to decreased conception rate⁷ (Figure 3). As cows lose more body condition, conception rates tumble relative to no change or an increase in BCS. The key to achieving and maintaining adequate body condition is to keep cows consuming a palatable, energy-dense ration in early lactation. This strategy will prevent excessive losses in BCS, resulting in improved conception and pregnancy rates. Energy Booster 100[®] is a highly palatable fat source that can help your cows through difficult times in early lactation.

Fat Fast Facts

- Loss of body condition in early lactation adversely affects reproduction.
- Feeding a palatable, energy-dense ration helps achieve and maintain adequate body condition.
- Energy Booster 100[®] is a palatable energy source

Figure 1. A) Percentage of anovular cows by body condition score at 47 to 53 days postpartum in all cows. B) Percentage of anovular cows by body condition score at 47 to 53 days postpartum by parity (primiparous cows = ○; multiparous cows = ●). Numbers in parentheses represent number of observations at each BCS point. Adapted from Gümen et al., 2003.

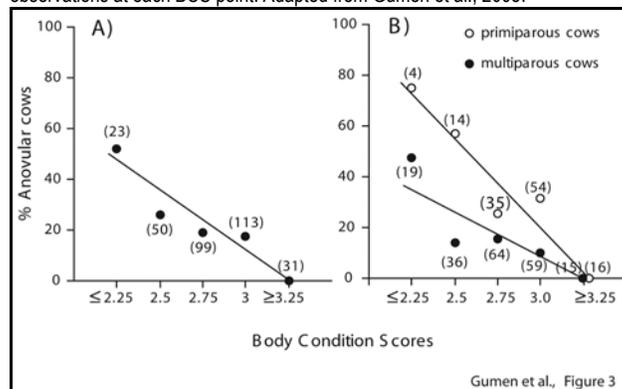


Figure 2. Conception rate and pregnancy rate for ovular and anovular cows with either estrus detection or Ovsynch. Adapted from Gümen et al., 2003.

	Ovular		Anovular	
	Estrus (n=135)	Ovsynch (n=117)	Estrus (n=31)	Ovsynch (n=33)
Inseminated During 21 d	71%	100%	29%	100%
Conception Rate at 60 d	35%	32%	11%	9%
Pregnancy Rate at 60 d	29%	32%	3%	9%

Figure 3. Effect of change in body condition score on conception rate. Adapted from Ferguson, 2005.

Change in BCS	Unpublished (0 to breeding)	Perkins, 1985 (0 to 5 wk)	Britt, 1992 (0 to 5 wk)
0.51 to 1.0	56%		
0.01 to 0.5	50%		62%
0	46%		
-0.01 to -0.5	43%	65%	
-0.51 to -1.0	37%	53%	25%
>-1.0	29%	17%	

Unpublished data, n=531 cows. For Britt, 1992 data – body condition changes were estimated from weight changes.

¹Beam and Butler, 1997. ²Beam and Butler, 1998. ³Butler et al., 1981. ⁴Canfield and Butler, 1990. ⁵Canfield et al., 1990. ⁶Cordoba and Fricke, 2002. ⁷Ferguson, 2005. ⁸Gümen et al., 2003. ⁹Lucy et al., 1991.

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