



CEDAR GROVE VETERINARY SERVICE NEWSLETTER



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DOUBLE PROSTAGLANDIN SHOTS IN YOUR TIMED AI PROGRAM: IS IT RIGHT FOR YOU?

While it seems like Ovsynch and other timed AI protocols have been around forever, they have only really been players in the dairy industry since the late 1990's. These early timed AI protocols have seen many changes and upgrades in the intervening time. The most recent change has been what some are coining a "double Lutalyse shot" or a second prostaglandin shot. This new addition to the timed AI library now has many farmers wondering if it may be something useful for their farms.

To understand the significance of adding a second prostaglandin shot to timed AI protocols, it is best to first review the mechanics and purpose of timed AI procedures. The most common misconception about programs like Ovsynch are that they are designed to guarantee pregnancy. This is not true. We often talk in the industry about cows being on a 21-day estrus cycle when, in reality, cows can have estrus cycles that vary between 18-24 days. This variability along with some cows that don't show heat well and the increased number of cattle on dairy farms can make it very difficult to breed cattle consistently without some

help. Timed AI programs and more recently activity monitors came on to the scene to help with some of these challenges.

Ovsynch, the most widely used program, help the farmer narrow the window of when to breed. This by extension can improve fertility since cows can only become pregnant if they are inseminated. However, if Ovsynch is started at the wrong time in the cow's cycle, the synch will be less effective, resulting in poor fertility. To overcome this flaw, Pre-Synch programs were designed to prep the cow prior to initiation of Ovsynch to increase the odds the cow would be in the right stage in her cycle at the start of Ovsynch. Every other change that has occurred in the years following has also worked on the same principle of refining the basic Ovsynch protocol to make it more likely that the cow is the right place at the right time to be bred.

One recent issue that researchers have noticed is that not all cows will respond fully to the prostaglandin shot (Lutalyse/ Estrumate/ Synchsure) at day 7 in a standard Ovsynch protocol. This leads to an incomplete regression of the corpus luteum (CL) which

DO YOU KNOW YOUR ANTIBIOTICS?

Excenel

Use: Excenel is on label to treat for:

- Metritis/uterine infection
- Bovine respiratory disease due to *Mannheimia*, *Pasteurella multocida* and *Haemophilus somnus*
- Foot Rot

Dose: 1-2 mL per 100lbs body weight IM or SQ

Dosing: Administer daily at 24 hour intervals for a total of three consecutive days. Additional treatments may be administered on days four and five for animals that do not show a satisfactory response after the initial three treatments.

Special Notes:

-Safe for use in pregnant animals

-Do not inject more than 1.5mL per injection site.

-Selection of dosage level and duration should be based on an assessment by the herd veterinarian

DOUBLE OVSYNCH WITH 2nd PGF

SUN	MON	TUE	WED	THU	FRI	SAT
					GnRH PGF	
	GnRH GnRH					
	PGF	PGF	GnRH	TAI		

Brayveen et al., 2009, Journal of Dairy Science 92:1413-1422

Calendar shows when the third prostaglandin shot should be given in the Double-Ovsynch protocol, two days before timed insemination.

can result in higher progesterone levels at the time of breeding. This negatively affects fertility since it is important that progesterone be as low as possible during conception. Based on this knowledge, some in the industry started to give a second dose of prostaglandin 24 hours after the first to more effectively regress the CL. Until very recently, data regarding its effectiveness has been anecdotal at best.

However, the University of Wisconsin-Madison has recently completed a large trial investigating the effects of a second prostaglandin shot on cow fertility. It should be noted that the study did not investigate whether increasing the first dose of prostaglandin would result in increased fertility. At this time, there is not data that shows increasing a single dose will improve effects on reproduction.

those only given one shot. The animals that seemed to demonstrate a better response were those that were enrolled in a re-synch program as compared to being bred for the first time. Overall fertility was increased with about 10% more pregnant cows at the time of pregnancy diagnosis in the two-shot prostaglandin cows as compared to the single-shot prostaglandin animals. These effects were more pronounced in second and greater lactation animals.

So, what does this mean to a dairy farmer? First, it means that timed AI protocols can be effective in improving fertility on a farm. But, they do depend on giving shots in a timely manner which is hinged on a good management system. Second, a second prostaglandin shot 24 hours after the shot on day 7 of a standard Ovsynch can lead to increased fertility in animals.

Preliminary data from the Wisconsin study has shown that 97% of the cows given the second prostaglandin shot had complete regression of the CL as compared to 83% of

Moreover, the 2nd and greater lactation animal would benefit more from the additional prostaglandin shot. The second shot of prostaglandin also appears to be more effective in improving fertility in cows enrolled for re-synchronization as opposed to first time bred animals.

Overall, it would be important to work with both your breeder and veterinarian to see if adapting your reproductive protocols with a second prostaglandin shot would be right for you. This study has shown clear advantages. But, remember that adding another shot to any program does add more time and labor so the benefits in fertility must balance appropriately. If you feel management of your fertility program has been optimized to the best of its potential, but you still want more; adding a second prostaglandin shot might be right for you.



"The revolution has been postponed ... We've discovered a leak."

Alert!

The CDC has recently published its report regarding antibiotic resistance in foodborne pathogens. The most significant finding was that the 46% of the most common *Salmonella* serotype were multidrug resistance. This is an increase from the 18% found in 2011. Animals are a component of the infection with this form of *Salmonella*. This data highlights the importance of good hygiene for those that work around animals since you or your family may be at risk of contracting a disease in which traditional drugs will be useless. It is also a good demonstration of what new legislation, including the VFD laws, are trying to accomplish to protect human health.

