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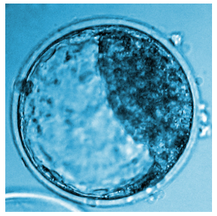
Advanced Reproductive Management (ARM)

We believe that Genetics for Life is about relationships, lifelong partnerships and presenting our clients with the best, most advanced options for use in their reproductive strategies.

“NOT ONLY DOES IVF ALLOW FOR YOUR OPERATION TO REALIZE MORE HEIFERS, BUT IT CAN ALSO CREATE SOME REPRODUCTIVE EFFICIENCIES.”

Worldwide, dairy producers have put a great deal of focus on improving efficiencies through standard operating procedures, herd nutrition and reproductive strategies. But producers are now looking for additional ways to improve herd performance. One of these new trends in reproduction is a concept called Advanced Reproductive Management (ARM).



Genetics is one of the most reliable ways to increase herd performance each subsequent generation as genetic increases are permanent, additive and rate limiting. And, we can probably all agree that since dairy cattle breeding began, it’s been in a constant state of improvement. However, with ARM, dairy cattle improvement can accelerate at levels we could only have imagined just a few years ago.

First, let’s talk about what ARM really is. ARM is a process of amplifying the best genetics in your herd by utilizing your lower value animals as recipients to carry higher value offspring. When applied correctly, the top 5% of your herd could potentially produce enough replacements to populate nearly 50% of your herd’s future replacement needs. This is definitely a more accelerated way for your herd to progress than ever before. And, if you’re able to utilize your best individuals to supply your herd’s future replacements your genetic progress is exponentially larger than it was ever before.

ARM is realized through the In Vitro Fertilization (IVF) process, but up until a few years ago IVF was an inefficient process that limited its application beyond seedstock breeders. However, with today’s advancements in the technology, the cost to deliver a pregnancy with a higher genetic value animal can more than pay for itself.

IVF is an advanced reproductive technology that is more complex than the well-known embryo transfer process. During IVF, a veterinarian or trained technician will use an ultrasound-guided needle to aspirate follicles off of a cow’s ovary through the vaginal wall. A vacuum system is used to recover the contents of each follicle, including the important oocyte. Once all the follicles are aspirated from the cow’s ovaries, the fluid is taken to a lab and a microscope is used to identify the oocytes. The recovered oocytes are washed and placed into a special media that will allow them to mature for 24 hours. Once they have matured, the oocytes will be fertilized with semen and the resulting embryos placed in an incubator for an additional seven days. Following this time, the embryos are ready to be transferred into recipient animals that are approximately seven days post-heat, similar to traditional embryo transfer programs.

IVF has many advantages over traditional embryo transfer. The first of these, is that

HOW CAN YOU START?

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IVF can begin as young as

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it can occur as often as every two weeks and can be utilized on heifers as young as seven months of age. Looking at donors, it's possible that one donor could produce over 50 offspring in a given year. When you combine these advanced IVF technologies with the use of sexed semen, your top donors can now produce over 90% females!

Not only does IVF allow for your operation to realize more heifers, but it can also create some reproductive efficiencies. In research conducted at Boviteq, Semex's Research & Development arm, IVF embryos have shown 10-12% increases in conception rate over conventional semen and a 20-30% increase in conception rates over sexed semen. Additionally, because you are working with a fertilized embryo, they've proven to be a great reproductive therapy to use during times of heat stress.

WHO SHOULD CONSIDER USING ARM?

In order for an ARM program to be successful, interested dairies must already have sound reproductive and management records in place. A reproductive program that isn't already maximizing heat detection, breeding protocols and has above average pregnancy rates for their region, is better served to first embrace current protocols.

It's also important that your herd identification be up to par for two reasons: 1) You must be able to select the very best animals within your herd as donors. 2) You must also be able to identify those lowest ranking animals that will serve as recipients.

It's important to remember that when we amplify our genetics, if we aren't identifying the best performing and lowest performing populations of our herd, we could easily select the incorrect animals and actually reverse our genetic trend.

HOW CAN YOU START ARM ON YOUR OPERATION?

First, have discussion with your herd veterinarian about your herd's reproduction, and discuss the next steps that are logical for you. If ARM looks like a good option, you will need to identify those animals that are in the top of your herd as potential donors, as well as those that are at the bottom to be recipients.

In order to ensure you've correctly identified and are working with the right populations you'll need to genetically identify your outliers through genomic testing. Finally, have a strategic plan in place to manage your genetics. Without a genetic plan, you will not be fully utilizing ARM as a solution.

Semex is ready to assist you with ARM on your operation through Boviteq's world-class, state-of-the-art IVF facilities in Madison, Wisconsin, USA and Saint-Hyacinthe, Québec, Canada. Work is already underway, assisting customers with valuable IVF solutions in both the commercial and elite genetic sectors. Those interested in exploring these solutions on their dairy should contact their Semex Genetic Consultant.