

Maximize Female Potential

Assisted reproductive technologies are improving pregnancy rates and increasing the genetic contribution of top females.

Story & photo by JD Rosman

As the Angus breed continues to be the leader in genetic advancement within the beef industry, capturing those elite genetics and capitalizing on them is becoming extremely vital in today's fast-paced market.

Todd Bilby, associate director of ruminant technical services at Merck Animal Health, told those at the 2016 Angus Convention attending an Angus University Workshop focused on maximizing female genetic potential that the technology available greatly helps producers improve their herd's potential.

"Our toolbox is rich from an assisted reproductive technology standpoint," Bilby said. "We have artificial insemination (AI), embryo transfer (ET), sexed semen and *in vitro* fertilization (IVF)."

While not new tools, Bilby said they have "streamlined and improved the pregnancy rates which we can achieve."

Bilby said by utilizing IVF in conjunction with genomically enhanced data, the genetic potential of the overall operation increases as the time frame decreases.

DNA profiling your herd helps find your top females, Bilby said. "Those then serve as your nucleus herd, allowing you to then use IVF because you produce more embryos in a time span with the donor cow than you could through conventional superovulation."

Producers can superovulate a donor and aspirate oocytes for IVF roughly every other week and up to nearly 100 days into pregnancy. This provides many opportunities to capture as many embryos as possible.

Bilby's work takes him abroad to countries such as Brazil where cattlemen are quickly adopting IVF and other fertility technology in order to improve pregnancy rates in heat-stressed areas.

Compared to using a traditional AI program, IVF can increase pregnancy rates due to the manipulation of embryos in a lab atmosphere, Bilby explained. Brazil currently leads the way in using and adopting IVF technology due to cheaper labor and more trained IVF professionals.



► "We now have the ability to genotype an embryo," shared Todd Bilby, associate director of ruminant technical services at Merck Animal Health. "This allows us to determine whether that specific embryo is worth placing in a recip." To listen to his presentation or access the PowerPoint, visit <http://bit.ly/AC16-Bilby>.

"It has kind of become a sexy thing to do in Brazil," Bilby said. "The United States is catching on and beginning to use IVF more extensively, just like producers have implemented genomically enhanced expected progeny differences (GE-EPDs) into their operations."

New advancements in IVF are allowing producers to get a better look into the embryo's genetic potential.

"We now have the ability to genotype an embryo," Bilby shared. "This allows us to determine whether that specific embryo is worth placing in a recip."

Embryos can also be sexed before placing them in a recipient cow. This allows producers to prioritize those embryos depending on the operation's overall goal, he said.

"Have a plan and know the benefits and the pitfalls," Bilby advised Angus breeders. "It

is like really advanced cooking; there are a lot of steps involved."

For breeders looking to try IVF for the first time, Bilby recommended starting small and working with a reputable company or person.

Bilby's presentation was one of the Angus University Workshops sponsored by Merck Animal Health Nov. 6 at the 2016 Angus Convention. To listen to his presentation or access the PowerPoint, visit <http://bit.ly/AC16-Bilby>. For comprehensive coverage of the Angus Convention, including speaker summaries, links to the full presentations, photos, videos and more, visit www.angus.media/news/Angus-Convention.



Editor's Note: A student at Oklahoma State University, JD Rosman was the 2016 Angus Media communications intern and continues to contribute as a freelancer.