



by Dr Jason Russell



TOP 10 TIPS FOR REPRODUCTION

(from the 2019 ARSBC conference)



The 2019 Applied Reproductive Strategies in Beef Cattle (ARSBC) Conference held on 20–21 August in Knoxville, Tennessee in the USA, provided not only applied strategies, but also an inside look at recent research findings. Here are my top 10 takeaways.

1 Know where you're going and decide how you're going to get there

Dr Vitor Mercadante, from Virginia Tech University, emphasised the importance of setting clear goals with underlying steps for goal achievement. For example, in order to maintain a breeding season of no longer than 70 days, he suggested that producers should aim to reduce breeding season length by between seven and 10 days each year until a 70-day season is achieved.

2 Use the resources available to you

According to the University of Missouri's Dr David Patterson, a variety of synchronisation protocols and other resources can be found on the website of the University of Nebraska-Lincoln's Institute of Agriculture and Natural Resources, beefrepro.unl.edu. In addition, Dr Sandy Johnson from Kansas State University recommended downloading a free oestrus synchronisation planner from iowabeefcenter.org/estrussynch.html.

3 Match management and herd expectations to the available resources

Dr Jon Beever, from the University of Tennessee, gave an overview of genomic selection and advised that operations use the tool while considering current management and environments.

◀ Dr Joe Dalton from the University of Idaho in the United States underscored the importance of breeding soundness exams (BSE) for natural service bulls prior to purchase. Photo: Wikus van der Merwe

"Don't select for high milk production if the nutritional resources aren't available," he said.

Reinforcing the importance of matching management tools, forage resources, and herd expectations, Dr David Lalman (Oklahoma State University) contended that increased selection for growth rate and milk production should be balanced with available resources. He highlighted that over 10 experiments, an additional kilogram of weaning weight required an additional 42 kilograms of milk. Dr Lalman further illustrated that if a high-quality forage contains 69% total digestible nutrients, each kilogram of added weaning weight would require 56 kilograms of high-quality forage, and even more if forage quality decreased.

4 Technology is your friend

Whether artificial insemination (AI) or embryo transfer is utilised, Dr Cliff Lamb from Texas A&M University emphasised that resynchronisation with a progestin could increase the synchronised return rates of non-pregnant females. He recommended the application of an intravaginal controlled progesterone release insert for 13 days on the day of embryo transfer, seven days after oestrus, or from five days after timed-AI until day 21, followed by bull exposure or heat detection and AI.

5 Prepare, prepare, prepare

Dr Joe Dalton (University of Idaho) shared his expertise on bull fertility, and underscored the importance of breeding soundness exams (BSE) for natural service bulls prior to purchase, annually, and whenever there is a fertility concern. He did caution that the exam confirms a bull as a potential breeder, but that the exam does not include libido, which plays a significant role in a bull becoming a successful breeder.



▲ “When learning artificial insemination (AI) for the first time, try to attend an AI school that is close to the start of the breeding season,” advised Dr Sandy Johnson from Kansas State University.

6 Optimise your nutritional strategy according to the phase of growth

Covering strategies for developing bulls, Dr Jason Smith (TAMU AgriLife) focused on the importance of both pre- and post-weaning phases. He emphasised that restrictive nutrition prior to six months of age was negatively impactful to development. At the same time, he also cautioned against maximising post-weaning weight gain using high-energy diets at the expense of proper spermatogenesis, attainment of puberty, and

libido. The risks associated with high-energy diets on hoof conformation and structural soundness were also mentioned. Dr Smith finished with an emphasis on the importance of mineral nutrition and clarified that mineral supplementation is best delivered in the diet.

7 Timing is everything

“Waiting for the end of calving season to determine pregnancy rate is not economically viable,” stressed Dr Ky Pohler from Texas A&M University, as he reviewed both long-standing pregnancy confirmation



techniques like palpation and ultrasound, as well as recent developments in pregnancy confirmation using blood- and milk-based detection of pregnancy-associated glycoproteins at 28 to 30 days post-insemination.

8 Reduce embryonic loss

Cattle are most susceptible to embryonic loss due to shipping and other stresses between days five and 42 after insemination, explained Dr George Perry (South Dakota State University). He advised that, at a minimum, transportation should be avoided during that time period. The month prior to the ARSBC conference, Dr Perry presented a new study on heifer development nutrition and embryonic loss. Embryo survival from day 17 to day 60 post-AI was greater (73% versus 62%; $P = 0,13$) in heifers fed amino acid complexed trace minerals (zinc, manganese, copper, plus cobalt glucoheptonate) during development compared to heifers fed inorganic hydroxychloride and sulphate trace minerals.

9 The aim is to wean older, heavier calves

Dr Les Anderson (University of Kentucky) discussed postpartum interval and anoestrus, highlighting the importance of maintaining body condition scores above five to help ensure that more cows are cycling early in the breeding season, thus generating more calves early in the calving season and, ultimately, weaning older, heavier calves.

Pointing to over a decade of calving data, Dr Adam Summers (New Mexico State University) demonstrated that calves born in the first 21 days of the calving season weaned at least 13 kg heavier than later-born calves.

10 Teamwork will always pay off

Regarding vaccination protocols, Dr Marc Caldwell (University of Texas) presented on reproductive herd health, and the importance of communication between the herd manager and veterinarian in order to administer vaccinations at appropriate timepoints relative to calving, including cows, bulls, and breeding-age heifers receiving vaccinations four to six weeks prior to breeding.



Conclusion

As with previous years, the ARSBC conference provided a wealth of valuable information, including strategies and tools for everyone, from the operation using *in vitro* fertilisation to the operation considering oestrus synchronisation before bull turn-out for the first time.



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