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"Any sufficiently advanced technology is equivalent to magic," Sir Arthur C. Clarke. Clarke knew what he was talking about, but I wonder if he knew technology would serve as magic to the beef industry? Adapting new technologies like embryo transfer, DNA testing, and drones has increased production, safety, and education throughout the beef industry.

Reproductive technologies have moved the beef industry forward. Artificial insemination (AI) was used as early as the 1950s. Not long after that, frozen semen revolutionized AI. Beef reproduction has come a long way over the last 70 years. Embryo transfer (ET) and invitro fertilization (IVF) are revolutionizing beef reproduction now. Using ET and IVF can improve herd genetics at a faster rate than AI or natural service. Operations that use ET can increase profits by more than five percent. This is due to increased weaning weights and calf value. IVF allows for the use of sexed semen. Being able to select for calf sex prior to breeding is also benefiting the beef industry. When using IVF, you can use one straw of semen to fertilize multiple eggs rather than using one straw to breed one cow with AI. As time goes on, beef reproductive technologies will continue to improve.

DNA testing is another technology that has increased production and education. Farmers and ranchers can learn more about their cattle through DNA. Simple traits such as hair color and horns can be predicted using DNA testing along with complex traits like feed efficiency and carcass quality. Parent verification is also done by using DNA. While this technology is widely used by registered seedstock producers, it is available to all beef producers. The collection of DNA can be done three ways; blood sample, hair sample, or tissue sample. DNA testing makes other technologies possible such as genomic EPDs. The use of DNA is going to continue to impact the beef industry.

Drones are a great example of how the beef industry has adapted new technology. Producers and feedlot managers are using drones to help manage their operations. Drones can do basic jobs easier and faster than humans can. Checking fences, water tanks, gates, and pastures a few of the jobs that can be easily accomplished with a drone rather than by a human. In many parts of the country where parts of pastures are not accessible by vehicle or horseback, drones are used to locate and check on cattle. Recently, ranchers have been using drones to herd cattle. It has been found that cattle move away from the sound of a drone as it hovers over the herd. Stray cattle can also be brought back to the herd using a drone. Jobs that typically take more than one person to complete on foot or horseback can now be completed by one person operating a drone. Drones help cut back on the time and labor used on farms and ranches.

Through the use of technology and research, producers have created Beef Quality Assurance (BQA). BQA helps ensure cattle cared for using best management practices. Producers who are BQA certified, produce safe and wholesome beef products. Following BQA guidelines also means producers are working in the safest ways on their operation. This program is voluntary further proving to consumers that cattle producers are committed to raising beef safely, humanely, and sustainably. Over 85% of the beef raised in the United States is raised by BQA certified farmers and ranchers. Without the technology and research used to create BQA guidelines, best management practices would not be what they are today leaving both beef products and production practices less safe.

As producers, we know that education is important now more than ever. Technology is making it easier for us to educate the general public about our industry and educate ourselves. By using social media, we can share photos, videos, and other media with anyone and everyone. Social media is a technology that can be misused and cause more harm than good. Sharing facts and information with those that are misinformed or uninformed will safeguard our image with consumers. Producers can also take advantage of different informative webinars and conferences virtually thanks to technology. You can connect with industry leaders from the comfort of your home. It is important that producers stay educated and educate others on the importance of the beef industry.

It is clear, technology is magic for the beef industry. Taking advantage of technologies such as embryo transfer, DNA testing, and drones has moved our industry forward. Adapting new technologies increases production, safety, and education within the beef industry.

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