Management

Are Beef Cattle Producers Using the Available Technologies?

By John Paterson, Executive Director of Education

This fall I sought out opinions from about 25 thought leaders in the beef industry to answer the question “What technologies is the beef industry not using to the fullest extent to improve production efficiency?” The following is a partial summary of their responses.

Animal Breeding and Genetics. It is embarrassing that we have known for 80 years heterosis is beneficial to the commercial cow-calf producer, and yet are neglecting it. It seems genetic technologies are some of the most underutilized in this business. In addition to most producers having a very limited understanding of genetic evaluation and improvement tools, a substantial number reject the technology on the grounds that “by god I know a good bull when I see one.” These technologies are well proven and improving constantly both at the molecular and quantitative tool levels. They can mean so much to this industry. Even simple and guaranteed profit enhancing technologies like systematic crossbreeding are often the victim of marketing and misperception.

Structured Crossbreeding. The beef business is almost the only food industry where these decisions are made in this way often randomly, unilaterally and certainly without expertise.

We do not utilize breed resources we have fully or in the correct way. This can be extended to the development of maternal and terminal breeding systems to improve overall beef system efficiency. Expected Progeny Differences and Bio-Economic Index Values are now considered “old” technology, but survey results continue to show that these are not primary selection criteria. The many advances in genetic selection tools (e.g., Genomics) cannot be fully exploited if the two items above are not being implemented. Tradecraft-adapted or regionally adapted breed selection is probably underutilized due to marketing pressures (e.g., increasing black hide percentage). Mechanization/physiology research in cattle-specific traits (and livestock-specific studies in general) has been underfunded and understudied. Lack of resources limits application of available technology; and advances in this area could have broad impacts on selection, feed utilization, health, implant strategy etc. Genetic engineering applications from feedstocks to livestock, have been greatly underutilized due to policy, lack of understanding of the science and fear/uncertainty.

Selective and precise regulation of the time of ovulation in beef cattle, coupled with increased use of genetically preferable dams and sires, would increase production efficiency as well as quantity and quality of animal-derived food and nutrients for humans. If climate change occurs to the extent predicted by some, beef cattle production will increasingly depend on genetic advantages afforded by healthy, feed efficient, fertile, and productive cattle adapted breed types. Therefore, increased understanding and use of agents to precisely regulate the timing of reproductive management procedures will be of benefit to the beef industry and consumers of beef products. In addition, enhanced reproductive and health status of livestock can help lessen environmental impacts of livestock production on air, water and soil. The bottom line is that it may require more industry coordination to push these technologies where they need to go.

Animal Management. The structure of the beef cattle industry has not evolved in the same way as other livestock industries. Efficiencies in management could probably be realized with adjustments. Examples include preconditioning of calves before sale. We should have more than 90 percent of our calves that are fully preconditioned before weaning. It is financially positive for the cow-calf producer as well as the feeder and it is positive for animal welfare. Not using implants in suckling and backgrounding calves, the last number I saw was that they are used in 11 percent of suckling calves but about 98 percent of these calves go into a conventional market. Other management recommendations would include installation and use of scales on operations, hay nutrient profile testing, promotion of on-farm/ranch data/information systems and the usage of record keeping software/hardware to assist in management decisions.

Some would disagree with this, but I would argue that our refusal to utilize animal identification technology, individually and especially collectively, is limiting our potential as an industry. Animal ID has payoffs in disease risk reduction and control, would facilitate more value added beef marketing, and would improve productivity and production efficiency by incorporating and transmitting genetic and other information vertically through the production chain. Database mining to improve decision making is not widely utilized by the industry. As a bonus, it would also improve our potential to enter several export markets (including China) that have long held traceability up as a barrier to entry for U.S. beef.

Why is feedback management important? Feed cost of gain is equal to 90-95 percent of total cost of gain. The remainder is processing, medicine, death loss and railer costs. Jouleage level is set consistent with management level of the feedyard. Lower food value feedyards produce efficiency and cost of gain. Variability is the enemy because intake variability reduces average daily gain 10 percent, and increases both dry matter feed conversion and feed cost of gain by 10 percent. This can equate to $500/ha on a $1000/CWT feed cost of gain and 500 lb. feed (750-1250 lb.).

Reducing feedyard variability results in maximizing animal performance by reducing risk of digestive upset (bloating/acidosis), liver abscesses and founder, and maximizes promised return. It is important for “Best Cost” Ration Formulation necessary to achieve Least Cost Performance.

The Bottom Line. Quality management is not fully practiced in production. It is time to move beyond the “injection site” discussion and embrace the modern educational based RQA, which includes cow-calf, stocker and feedyard assessments. Livestock producers have been reluctant for the most part, to utilize these tools, much less to subject their farms/ ranches to third-party certification and implement recognized standards for safety and quality management (e.g., Global GAP, ISO9001, etc.).

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