Implications of Technological Advances in Range Livestock Production

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Producers are using implants and feed additives for range calves, stockers, and yearlings as well as in the feedlot. The widespread adoption of a systematic cross-breeding systems has increased weights of market animals. All of these practices have increased production efficiency by increasing marketable beef from a constant herd. Twinning should be considered in the same context as any other technology. Our ability to increase production per animal does not necessarily mean increased profit. Similarly, the benefit of range improvements or “new” grazing management systems must be weighed against costs and risk.

Our hypothesis is that while cattle numbers have decreased in recent times, the advances in technology have maintained levels of production. Price has remained low because the supply schedule has shifted. If production is increased further, assume 30 to 40% by twin calving, the supply would be shifted further. The equilibrium with demand would be for a lower price at a greater quantity. Consumers might buy more beef; a quality product would be more affordable. Unfortunately, a lower price might not translate into a higher per capita red meat consumption rate. Other variables such as dietary preferences and health concerns may constrain consumption more than price.

Implications of technological advances are numerous and raise many questions and issues. Will future advances continue to reduce potential profit per head? Will U.S. beef be more competitive in international markets? What does this imply about the contention that the beef industry is a mature industry?

What does this imply about adopting new technologies? We have simply raised questions, and are not suggesting that new technologies should not be used. The first who adopt successful new technologies will benefit the most. Other ranchers can benefit from adopting technology, but at a decreased amount. Marginal benefits of implementing technology approach the costs of implementation as markets adjust to increased efficiency. The last rancher to adopt a technology will gain little. Ranchers should not be encouraged to implement technologies unless they are profitable to their operations.