

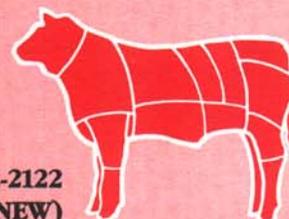
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PRODUCTION OF YOUNG BULLS FOR BEEF

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In United States beef production, bulls are commonly castrated because steers are easier to manage and they produce carcasses that are more acceptable under traditional market conditions. However, bulls offer a 15% advantage in growth rate and feed efficiency when compared to nonimplanted steers and a 5-7% advantage when compared to implanted steers. Bulls also produce carcasses that are as much as 35% leaner than carcasses from steers. Table 1 summarizes the production differences between bulls and steers. Production of beef from young bulls has the potential to improve efficiency of U.S. beef production, but producers must develop strategies specific for producing and marketing them.

Potential Problems

Marketing bulls can be difficult because most beef processors resist buying them. Bulls consistently have lower quality grades than steers. Because of their aggressive nature, bulls also are more likely to produce dark-cutting carcasses than steers. Hide pulling of bulls at slaughter can be more difficult than that of steers. Bull beef may be darker in color

and coarser in texture than steer beef. If these quality problems are observed, along with excessive carcass masculinity, the carcass is assigned the "Bullock" grade and is severely discounted.

Handling of bulls can also be difficult. They are more likely to challenge workers than steers and can be more destructive to facilities and equipment.

Selection

The type of cattle most conducive to feeding as bulls may differ from the type most profitable as steers. Bulls classified as large framed (larger than frame score 5) will not reach USDA Choice at acceptable market weights. Consequently, these cattle should probably be fed as castrates. On the other hand, feeding as bulls may enhance the efficiency of small framed cattle (frame score 4 or less).

Feeding and Management

An accelerated production system should be employed if one is interested in feeding bulls. Place bulls on high energy diets as soon

as possible after weaning. Avoid a growing-backgrounding phase. Market bulls of all breeds before they are 16 months old. Because bulls of some breeds may require at least 200 days on a high energy diet, they must be placed on feed by 9-10 months of age. To further accelerate the system, early weaning can be employed without adverse effects if bulls are creep fed. To help minimize fighting, do not mix groups of bulls.

Diet formulation for bulls is somewhat different than for steers. The National Research Council (1984) recommends dietary crude protein levels for bulls that are slightly higher than for steers at most weights. Estimates of feed intake for steers appear suitable for bulls of the same weight. Vitamin and mineral requirements of bulls have not been thoroughly evaluated.

It is recommended that producers consider retaining ownership of bulls until slaughter to take advantage of their potential for growth and efficiency. The value of creep feeding may be diminished if ownership is retained.

Currently, no growth promoting implants have been approved for

use with bulls. However, implanting bulls at birth with estrogenic compounds has been shown to decrease masculinity and behavioral problems as well as increase fat thickness. The effect of implanting at birth on feedlot performance is unclear. Implanting bulls at weaning with estrogenic compounds results in no change in masculinity or palatability, but may improve feedlot performance. The use of ionophores to improve feed efficiency is recommended.

Proper management of bulls prior to slaughter is critical. Pre-slaughter stress often results in dark-cutting beef due to depletion of the muscle carbohydrate, glycogen. Prior to slaughter, it is important that bulls are not regrouped, mixed with strange bulls or penned adjacent to heifers. Fighting among mixed bulls is more likely to cause dark-cutting beef than exposure to unfamiliar environments such as the truck or holding pens. It may be advantageous to arrange to have the bulls slaughtered immediately after unloading instead of holding them.

Marketing

Markets must be identified before bulls are fed. Producers should be aware that the number of packing plants interested in slaughtering bulls is limited. Contact potential markets to determine

Table 1. Summary of comparisons of bulls and steers: average daily gain (ADG), feed to gain (F/G) and carcass fat thickness (Fat Th)

Slaughter endpoint	No. of studies	ADG of bulls	F/G of bulls	Fat Th of bulls
Steers = 100				
Weight	8	119	88	69
Time on feed	21	116	86	65
Fat thickness	3	112	91	89
Carcass composition	1	—	105	129

their interest and describe the type and age of the bulls to be fed along with the expected slaughter endpoint.

It is yet unclear whether bulls should be marketed on a grade and yield basis. Few markets pay a premium for the leanness of yield grade 2 carcasses compared to Y.G. 3's. No premiums are currently offered for Y.G. 1 carcasses. If these markets develop, or when the discount assigned to USDA Select grade carcasses is low, grade and yield sale of bulls would be favored. If bulls are marketed on a grade and yield basis, the producer will be penalized for any dark cutting, Bullock or USDA Standard grade carcasses. With proper feeding and management, these problems can be avoided. If, however, a high incidence of these market discounts are encountered, the decrease in market value will more than offset the production advantages of bulls.

Producers should be aware that if bulls are fed until 60% or more

grade USDA Choice, most of the efficiency advantages of bulls are lost.

Conclusion

If fed, managed and marketed properly, young bulls may be fed profitably and will produce beef of acceptable quality. Make arrangements for marketing them before they are placed on feed. Feed bulls a high energy diet for as long as possible, and slaughter at 16 months of age or younger. Do not regroup bulls during the feeding period and take care to avoid pre-slaughter stress.

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