FABRICATION YIELDS OF SERIALLY HARVESTED IMPLANTED OR NONIMPLANTED STEERS

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I. OBJECTIVES

Cattle administered growth-promoting implants exhibit an increase in carcass weights, often composed of increased lean and bone mass, with variable results observed in fat mass. Specific carcass components that experience this increase in mass, and the rate to which this change occurs, are limited in the literature. The objective of this study was to quantify differences in fabrication yields of implanted and nonimplanted steers.

II. MATERIALS AND METHODS

Steers (Charolais × Angus cross, $n = 80$; initial body weight [BW] 271 ± 99 kg) were paired by genetic group, estimated finished BW, frame score, and days to target BW and randomized to harvest date (day 0, 42, 84, 126, 168, 210, 252, 294, 336, 378), and individuals within pairs were randomized to nonimplanted negative control or REV (Revalor-XS on day 0 and 190) treatments. Right sides of each animal were fabricated after a 48-h chill into primals, denuded subprimals, lean trim (80/20), trimmed fat (>95/5), and bone; weights were recorded individually. Data were analyzed via mixed models.

III. RESULTS

Administration of REV increased ($P \leq 0.03$) absolute mass of cold side weight (CSW) 7.7%, bone mass 4.9%, and red meat mass 8.5% but did not alter fat mass ($P = 0.78$). Muscling (muscle:bone) and leanness (muscle:fat) were unaffected by treatment ($P \geq 0.27$). Leanness decreased in a quadratic manner across days on feed (DOF) ($P < 0.01$), while muscling was unaffected by DOF ($P = 0.90$). Administration of REV increased ($P \leq 0.02$) brisket and foreshank primals by 6.9% and 7.2%, respectively. Chuck primals from REV steers were 8.4% heavier ($P \leq 0.02$), with similar trends in the shoulder clod, flat iron, petite tender, chuck eye roll, and mock tender subprimals. Rib primals from REV steers were 5.2% heavier ($P \leq 0.04$), along with the ribeye roll and rib blade meat. Plate primals did not differ ($P = 0.13$) between treatments; however, the inside skirt, outside skirt, and outside skirt as % CSW were heavier ($P \leq 0.04$) from REV steers. Loin primals from REV steers were 7.0% larger ($P < 0.01$), along with the striploin, tenderloin, top sirloin butt, top sirloin butt cap, and bottom sirloin tri tip subprimals. Flank primals from REV steers were 8.6% heavier ($P \leq 0.04$), bottom sirloin flap and flank steak were also heavier, and the elephant ear tended to be heavier ($P = 0.08$). Round primals from REV steers were 6.3% heavier ($P \leq 0.03$), and the top round, eye of round, bottom round, and sirloin tip all exhibited similar upward trends. Proportion of plate (0.009%), flank (0.007%), rib (0.004%), and brisket (0.002%) to % CSW all increased with increasing DOF, whereas the loin (−0.001%), chuck (−0.001%), foreshank (−0.002%), and round (−0.017%) decreased. Fat yield increased at 0.043% of CSW per day, whereas red meat yield and bone decreased at 0.023% and 0.013% of CSW per day, respectively. Length of feeding period notably affected ($P < 0.01$) all primal weights and % CSW, with the exception of the chuck and loin as % CSW ($P \leq 0.17$). These data indicate

that carcasses from implanted steers are more likely to have heavier side weights, consisting of heavier quantities of bone and red meat with no change in fat. Although implants increased tissue mass, they did not alter the percentage of primal or subprimal components.

IV. CONCLUSION

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Keywords: fabrication yields, implants, leanness, muscling, serial harvest