EXTENSION
BEEF CATTLE RESEARCH UPDATE
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Breed Trends in Beef Calf Lots Marketed through Superior Livestock Video Auctions from 1995 through 2018

The first Brahman cattle in the United States were imported from India to South Carolina in 1849.[1] The American Brahman was developed to tolerate subtropical environments.[2] Brahman crossbred cattle improved beef production in the southern region of the United States because of their natural heat tolerance and insect resistance.[1] The Hereford breed was the predominant British breed used in the late 1800s through early 1970s. However, by the mid-1970s, the number of registered Angus cattle in the United States surpassed registered Hereford cattle.[1] Exotic breeds of cattle which were generally larger framed, heavier muscled, and produced higher cutability carcasses were imported from Europe to the United States in the late 1960s and 1970s.[2] Exotic breeds were crossed with existing British cattle in attempt to produce high quality, lean carcasses.[3] As the beef industry evolved, more emphasis was placed on carcass traits and the US cowherd shifted to a predominantly British-breed, black-hided herd.[4]

Kansa State University research characterized potential changes in breed composition of lots of beef calves marketed through Superior Livestock Video Auctions.[5] The specific objectives of this study were to (1) assess trends in percentage of lots marketed with Brahman influence nationally and regionally within the United States and (2) characterize trends in percentage of beef calf lots sired by a single breed.

Data were available on 93,081 lots marketed through 189 summer video auctions from 1995 to 2018. Breed composition of each lot was described by the seller working with the livestock auction service representative for each lot of calves. Each lot of calves was categorized into 1 of 3 breed-description groups: (1) Brahman influenced, (2) English–Continental crossed with no Brahman influence, and (3) English and English crossed with no Brahman influence. Percentage of lots marketed for each of the three breed descriptions were analyzed to determine national and regional trends. The United States was divided into seven regions: West Coast, (AK, CA, HI, ID, NV, OR, UT, and WA), Rocky Mountain/North Central (CO, IA, IL, IN, MI, MN, MT, ND, NE, SD, WI, and WY), South Central (AZ, KS, MO, NM, and OK), Texas (TX), Coastal (AL, FL, GA, LA, MS, and SC), Subcoastal (AR, KY, NC, TN, VA, and WV), and Northeast (CT, DE, MA, MD, ME, NH, NJ, NY, OH, PA, RI, and VT). Texas was assigned a separate region because of the large number of lots originating from that state. The Northeast region was excluded from the analysis because few calf lots originated from this region.

These researchers reported that nationally, the percentage of Brahman-influenced lots decreased ($P < 0.0001$) in the United States during the 24 years (Figure 1). In addition, the percentage of lots of English-Continental crossed with no Brahman influence also decreased ($P < 0.0001$). However, there was an increase ($P < 0.0001$) in the percentage of English and English-crossed lots with no Brahman influence.

The percentage of lots with Brahman influence decreased ($P < 0.0001$) in the West Coast, Rocky Mountain/North Central, South Central, and Texas regions. In these same regions, the percentage of English and English-crossed lots increased ($P < 0.0001$). These are the largest 4 regions represented in this analysis, totaling 95% of lots. No change occurred in the percentage of lots with Brahman influence in Coastal or Subcoastal regions which represented 5% and 1% of the total lots, respectively. On average, 94% of lots originating from the Coastal region were Brahman-influenced. These data show that fewer producers seem to market their calves via video auctions compared with other regions, which could be a result of smaller cowherds within the Southeast region. Many

producers in the Southern region of the United States maintain a cowherd with some Brahman influence because of the breed's enhanced heat tolerance and parasite resistance.

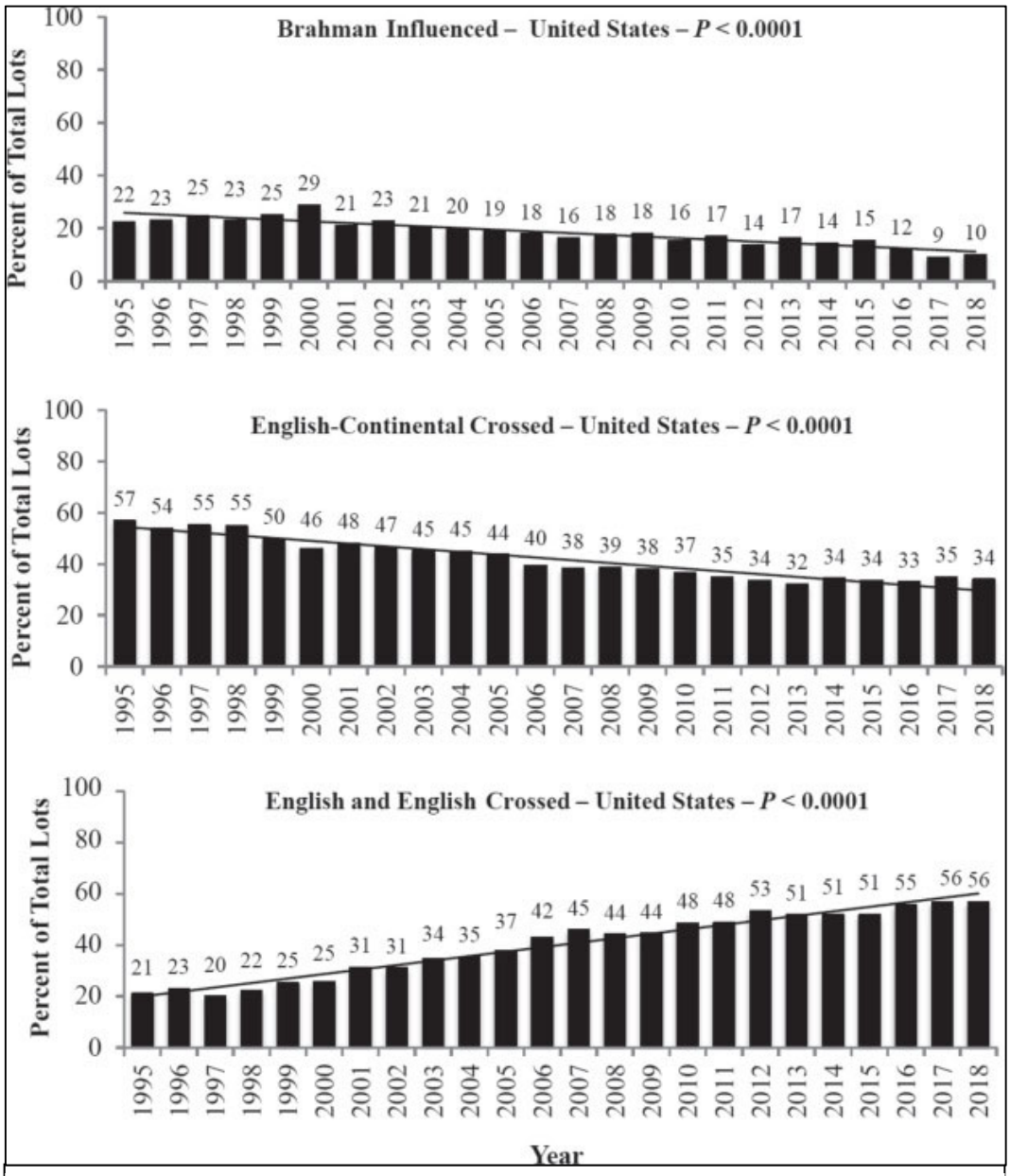

Figure 1. National trends in breed composition of the percentage of beef calf lots marketed via summer video auction in the United States from 1995 through 2018. Percent of total lots represents the percentage of lots categorized as the breed description. The P-value represents an increasing or decreasing trend within each breed description. Source: McCabe et al., 2020.

These authors noted that the decrease in the percentage of lots of beef calves with Brahman influence marketed via this video auction service could be a result of several factors. One potential explanation for the change in breed composition of lots of beef calves is price differences between the breed categories. Of the sold lots, Brahman-influenced lots had average price discounts of $4.49 and $3.65 per cwt of body weight when compared with lots of English and English-crossed and English-Continental crossed with no Brahman influence, respectively. These price discounts are likely driven by the beef industry's emphasis on carcass traits since Brahman cattle produce less tender, lesser marbled meat than non-Brahman cattle.

The specific sire breed of a lot of beef calves was recorded in the database starting in 2010. There were 35,483 lots of beef calves marketed via 211 video auctions from 2010 through 2018 included in the single-sire breed analysis. The percentage of lots of beef calves sired by Angus bulls decreased ($P < 0.0001$) over time. However, Angus-sired lots comprised the greatest percentage of single-sire breed lots, ranging from 71 to 82%. There was an increase ($P < 0.01$) in Brangus-, Charolais-, Red Angus-, and SimAngus-sired lots; and no change in Hereford-sired lots.

In conclusion, these data show that the percentage of Brahman-influenced lots decreased, but it remained static in regions with a relatively hot and humid climate where Brahman-influenced cattle are readily adapted. The percentage of Angus-sired lots remained the largest single-sire breed group but percentage of these lots decreased over from 2010 through 2018. Changes in market signals from packers may drive shifts in the cowherd. Thus, these researchers concluded that "commercial beef producers should appropriately consider environment, buyer demands, and available resources when making breed composition and trait selection decisions".

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