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Performance, Carcass, and Meat Traits of
Different Cattle Types

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Summary

Different crossbred (X) cattle types were evaluated for growth, feed efficiency, carcass and meat traits. Steers were studied from mating Angus (A), Hereford (H), Brahman (B), Sahiwal (S), Pinzgauer (P), and Tarentaise (T) sires to Angus and Hereford females.

Average daily gain (ADG) and feed efficiency were similar for all the crosses except that SX gained slower and required more feed per pound of gain. Brahman crosses tended to have higher, and PX tended to have lower dressing percentages than the other crosses. Quality grades ranged from low choice (HAX) to average good (BX and SX). HAX had higher fat trim percentages and lower retail product percentages than other crossbred types because they had more fat covering. All other crosses were similar in fat trim, retail product, and bone percentages. Taste panel flavor and juiciness scores did not differ between crosses. However, PX and HAX tended to be more tender than TX or BX, and considerably more tender than SX.

If all crossbred types had been slaughtered at the same percentage of body fat rather than at the same age, there would likely be no advantage of PX, TX, BX or SX over HAX in feedlot performance, carcass or meat traits.

Introduction

Two-year results from the U.S. Meat Animal Research Center's "cattle germ plasm program" are reported here. Kansas State University and the Standardization Branch, Food Safety and Quality Service, USDA, cooperated on carcass and meat aspects of the study.

Data on calving difficulty and preweaning performance resulting from matings in this study were obtained in addition to reproduction and maternal traits of the female progeny. That information is in Progress Report No. 5 from the "germ plasm evaluation program", Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, NE 68933.

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Experimental Procedure

Different crossbred (X) cattle types were produced by mating Angus (A), Hereford (H), Brahman (B), Sahiwal (S), Pinzgauer (P), and Tarentaise (T) sires to Angus and Hereford females. The two calf crops were born in March, April, and May of 1975 and 1976, castrated at birth and weaned when approximately 200 days old. All male calves were fed in a feedlot by sire breed groups to obtain growth and feed efficiency data. They were fed a corn silage-and-concentrate ration that approximated 80% TDN (total digestible nutrients) on a dry matter basis.

Approximately one-third of each crossbred type was slaughtered at each of three slaughter times. Steers born in 1975 were slaughtered after 192, 218, and 246 days on feed after a 40-day postweaning adjustment period. Steers born in 1976 were fed 180, 208, and 236 days after a 34-day postweaning adjustment period. All steers were slaughtered in a commercial slaughter plant. After a 48-hr chill, carcasses were evaluated for yield grade and quality grade. The right carcass side of an average of 45 steers per sire breed for each slaughter group (except for 34 Tarentaise-sired steers) were brought to Kansas State University for detailed cut-out and meat quality evaluations. The sides were fabricated into essentially boneless, closely trimmed retail cuts.

One rib steak was removed from each of the carcasses for Warner-Bratzler shear determinations of tenderness. Another rib steak was removed from six carcasses per crossbred group per slaughter time and evaluated for tenderness, flavor, and juiciness by a trained taste panel.

Results and Discussion

Feedlot average daily gain (ADG) was similar for all crossbred types except the SX which gained significantly slower (Table 18.1). Steers from H females had higher ADG than those from A females regardless of sire breed. Final weights of SX were the lightest of all crosses; BX the heaviest because they were heavier at weaning. Final weights were similar for HAX, PX and TX. Sahiwal crosses were less efficient in feed utilization than other crosses, and PX slightly more efficient than the other crosses. The remaining crosses were similar in feed efficiency.

Hot carcass weights were similar for all crossbred types except that SX were lighter (Table 18.2). Dressing percentages did not differ between HAX, TX, and SX; however, BX tended to dress highest and PX lowest. Quality grades ranged from low choice (HAX) to average good (BX and SX).

The range in yield grades for the different crosses was relatively narrow (3.2 to 3.8, Table 18.3), with no differences in rib eye areas but HAX had more fat cover which gave them a less desirable yield grade. TX had higher kidney knob percentages than the other crossbred types.

Hereford X Angus crosses had lower retail product and higher fat trim percentages than other crosses because they had more fat covering, with no advantage in muscle thickness (Table 18.4). All other crossbred types were similar in retail product, fat trim, and bone percentages. Taste panel flavor and juiciness scores did not differ statistically among crosses

(Table 18.5). However, PX and HX tended to be more tender than TX or BX, and considerably more tender than SX.

The only meaningful differences between crosses in this study probably were that SX have the least growth potential and Zebu-type cattle (S and B) tend to have less marbling and less tender meat. Most other differences can be attributed to differences in fatness at slaughter. If all crosses had been slaughtered at a constant percentage of body fat rather than at the same age, HAX probably would be at least equal to PX, TX, or BX in ADG, feed efficiency, quality grade, yield grade, retail product percentage, and meat palatability. That is, there appears to be no advantage of PX, TX, BX or SX over HAX in feedlot performance, carcass, or meat traits when all are managed as in this study.

Table 18.1. Postweaning average daily gains, final weights, and TDN efficiencies of different crossbred cattle types.

| Breed of steer | | no. steers ^a | | | | Postweaning average daily gain | | | | Final weight | | | | | Feed efficiency (TDN per lb gain) ^c | | | |
|--------------------------|----------|-------------------------|-----|-----|-------|--------------------------------|------|------|------|--------------|------|------|------|-------|--|------|------|------|
| Sire | Dam | S1 | S2 | S3 | Total | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | Ratio | S1 | S2 | S3 | Avg |
| Angus Hereford | Hereford | 24 | 24 | 26 | 74 | 2.53 | 2.50 | 2.42 | 2.48 | 1011 | 1071 | 1119 | 1067 | 99.4 | | | | |
| | Angus | 36 | 35 | 35 | 106 | 2.48 | 2.43 | 2.33 | 2.42 | 1030 | 1086 | 1128 | 1081 | 100.7 | | | | |
| | Average | 60 | 59 | 61 | 180 | 2.51 | 2.46 | 2.38 | 2.45 | 1021 | 1079 | 1124 | 1074 | 100.0 | 5.93 | 6.13 | 6.37 | 6.14 |
| Brahman | Hereford | 17 | 17 | 18 | 52 | 2.56 | 2.50 | 2.48 | 2.51 | 1059 | 1113 | 1170 | 1114 | 103.7 | | | | |
| | Angus | 34 | 34 | 33 | 101 | 2.40 | 2.36 | 2.41 | 2.39 | 1061 | 1125 | 1180 | 1122 | 104.5 | | | | |
| | Average | 51 | 51 | 51 | 153 | 2.48 | 2.43 | 2.44 | 2.45 | 1060 | 1119 | 1175 | 1118 | 104.1 | 5.99 | 6.19 | 6.18 | 6.12 |
| Sahiwal | Hereford | 19 | 19 | 21 | 59 | 2.38 | 2.34 | 2.27 | 2.33 | 997 | 1045 | 1116 | 1053 | 98.0 | | | | |
| | Angus | 32 | 32 | 31 | 95 | 2.22 | 2.13 | 2.11 | 2.15 | 984 | 1035 | 1084 | 1034 | 96.3 | | | | |
| | Average | 51 | 51 | 52 | 154 | 2.30 | 2.24 | 2.19 | 2.24 | 991 | 1040 | 1100 | 1044 | 97.2 | 6.08 | 6.41 | 6.55 | 6.35 |
| Pinzgauer | Hereford | 22 | 23 | 23 | 68 | 2.65 | 2.54 | 2.51 | 2.57 | 1031 | 1090 | 1144 | 1088 | 101.3 | | | | |
| | Angus | 36 | 36 | 36 | 108 | 2.48 | 2.42 | 2.30 | 2.40 | 1041 | 1096 | 1130 | 1089 | 101.4 | | | | |
| | Average | 58 | 59 | 59 | 176 | 2.56 | 2.48 | 2.41 | 2.49 | 1036 | 1093 | 1137 | 1089 | 101.4 | 5.76 | 6.00 | 6.26 | 6.01 |
| Tarentaise | Hereford | 12 | 10 | 9 | 31 | 2.58 | 2.50 | 2.42 | 2.50 | 1042 | 1080 | 1141 | 1088 | 101.3 | | | | |
| | Angus | 23 | 25 | 24 | 72 | 2.41 | 2.32 | 2.27 | 2.33 | 1043 | 1078 | 1137 | 1085 | 101.1 | | | | |
| | Average | 35 | 35 | 33 | 103 | 2.50 | 2.41 | 2.35 | 2.42 | 1043 | 1079 | 1139 | 1087 | 101.2 | 5.86 | 6.18 | 6.37 | 6.14 |
| Averages of all sires | Hereford | 94 | 93 | 97 | 284 | 2.54 | 2.48 | 2.42 | 2.48 | 1028 | 1080 | 1138 | 1082 | 100.7 | | | | |
| | Angus | 161 | 162 | 159 | 482 | 2.40 | 2.33 | 2.28 | 2.34 | 1032 | 1084 | 1132 | 1082 | 100.7 | | | | |
| | Average | | | | | 2.47 | 2.40 | 2.35 | 2.41 | 1030 | 1082 | 1135 | 1082 | 100.7 | 5.92 | 6.18 | 6.35 | 6.15 |

^aS1, S2, and S3 represent slaughter groups 1, 2, and 3. Steers born in 1975 were slaughtered after 192, 218, and 246 days on feed after a 40-day postweaning adjustment period; 1976 steers were slaughtered after 180, 208, and 236 days on feed after a 34-day postweaning adjustment period.

^bRatio relative to 1074 lb average of Hereford-Angus reciprocal crosses.

^cTDN = Total digestible nutrients determined on a 100% dry matter basis.

Table 18.2. Hot carcass weights, dressing percentages, quality grades, and marbling scores of different crossbred types.

| Breed of steer | | Hot carcass wt, lb | | | | Dressing percentage ^a | | | | U.S.D.A. quality grade ^b | | | | Marbling score ^c | | | |
|-------------------------|----------|--------------------|-----|-----|-----|----------------------------------|------|------|------|-------------------------------------|------|------|------|-----------------------------|------|------|------|
| Sire | Dam | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg |
| Angus Hereford | Hereford | 603 | 643 | 686 | 644 | 59.8 | 60.4 | 61.5 | 60.6 | 11.4 | 12.3 | 12.7 | 12.2 | 10.0 | 12.2 | 13.5 | 11.9 |
| | Angus | 623 | 664 | 703 | 663 | 60.3 | 61.0 | 62.1 | 61.1 | 11.7 | 12.3 | 12.1 | 12.0 | 10.3 | 12.1 | 11.6 | 11.4 |
| | Average | 613 | 653 | 694 | 654 | 60.0 | 60.7 | 61.8 | 60.9 | 11.6 | 12.3 | 12.4 | 12.1 | 10.2 | 12.1 | 12.6 | 11.6 |
| Brahman | Hereford | 615 | 653 | 700 | 656 | 60.3 | 61.3 | 61.6 | 61.0 | 10.5 | 9.8 | 11.0 | 10.4 | 9.2 | 7.8 | 9.5 | 8.8 |
| | Angus | 638 | 685 | 720 | 681 | 61.6 | 62.6 | 62.5 | 62.2 | 10.6 | 11.1 | 11.3 | 11.0 | 8.8 | 9.7 | 10.1 | 9.5 |
| | Average | 627 | 669 | 710 | 668 | 60.9 | 62.0 | 62.0 | 61.6 | 10.5 | 10.4 | 11.1 | 10.7 | 9.0 | 8.8 | 9.8 | 9.2 |
| Sahiwal | Hereford | 569 | 609 | 656 | 612 | 59.9 | 60.8 | 61.7 | 60.8 | 10.3 | 10.2 | 11.0 | 10.5 | 8.5 | 8.4 | 9.4 | 8.8 |
| | Angus | 580 | 619 | 646 | 615 | 60.8 | 61.9 | 61.2 | 61.3 | 10.4 | 11.8 | 11.8 | 11.4 | 8.8 | 11.2 | 11.1 | 10.4 |
| | Average | 575 | 614 | 651 | 613 | 60.3 | 61.3 | 61.5 | 61.0 | 10.3 | 11.0 | 11.4 | 10.9 | 8.6 | 9.8 | 10.3 | 9.6 |
| Pinzgauer | Hereford | 590 | 638 | 669 | 632 | 57.8 | 59.5 | 59.7 | 59.0 | 10.7 | 11.4 | 11.2 | 11.1 | 8.9 | 10.9 | 9.9 | 9.9 |
| | Angus | 620 | 657 | 695 | 657 | 59.4 | 59.9 | 61.2 | 60.2 | 11.8 | 11.9 | 12.6 | 12.1 | 10.8 | 11.5 | 12.7 | 11.7 |
| | Average | 605 | 648 | 682 | 645 | 58.6 | 59.7 | 60.5 | 59.6 | 11.2 | 11.7 | 11.9 | 11.6 | 9.8 | 11.2 | 11.3 | 10.8 |
| Tarentaise | Hereford | 602 | 639 | 677 | 639 | 59.8 | 60.8 | 60.7 | 60.4 | 10.5 | 11.3 | 11.0 | 10.9 | 8.9 | 9.6 | 10.4 | 9.6 |
| | Angus | 624 | 658 | 691 | 658 | 60.7 | 61.5 | 61.6 | 61.3 | 10.9 | 11.4 | 12.1 | 11.4 | 9.5 | 10.0 | 11.5 | 10.3 |
| | Average | 613 | 649 | 684 | 649 | 60.2 | 61.2 | 61.1 | 60.8 | 10.7 | 11.3 | 11.5 | 11.2 | 9.2 | 9.8 | 10.9 | 10.0 |
| Average of all sires | Hereford | 596 | 636 | 678 | 637 | 59.5 | 60.6 | 61.0 | 60.4 | 10.7 | 11.0 | 11.4 | 11.0 | 11.1 | 9.8 | 10.5 | 9.8 |
| | Angus | 617 | 657 | 691 | 655 | 60.5 | 61.4 | 61.7 | 61.2 | 11.1 | 11.7 | 12.0 | 11.6 | 11.6 | 10.9 | 11.4 | 10.6 |
| | Average | 606 | 646 | 684 | 646 | 60.0 | 61.0 | 61.4 | 60.8 | 10.9 | 11.3 | 11.7 | 11.3 | 9.4 | 10.3 | 11.0 | 10.2 |

^aDressing percentage equals hot carcass weight divided by final weight on feed and water (without shrink).

^bU.S.D.A. quality grade as revised in 1976. 10 = average good, 11 = high good, 12 = low choice, 13 = average choice, etc.

^cMarbling Score; 9 = slight+, 10 = small-, ..., 21 = slightly abundant+.

Table 18.3. Yield grades, rib eye areas, fat thicknesses, and estimated kidney, pelvic, and heart fat percentages of different crossbred types.

| Breed of steer | | U.S.D.A. yield grade | | | | Ribeye area, sq. in. | | | | Fat thickness, in. | | | | Est. kidney, pelvic and heart fat, % | | | |
|-------------------------|----------|----------------------|-----|-----|-----|----------------------|------|------|------|--------------------|-----|-----|-----|---|-----|-----|-----|
| Sire | Dam | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg |
| Angus Hereford | Hereford | 3.2 | 3.7 | 4.0 | 3.6 | 10.8 | 10.7 | 11.0 | 10.8 | .52 | .60 | .68 | .60 | 3.0 | 3.4 | 3.4 | 3.3 |
| | Angus | 3.6 | 3.9 | 4.2 | 3.9 | 10.6 | 10.8 | 11.0 | 10.8 | .65 | .68 | .74 | .69 | 2.8 | 3.3 | 3.5 | 3.2 |
| | Average | 3.4 | 3.8 | 4.1 | 3.8 | 10.7 | 10.8 | 11.0 | 10.8 | .58 | .64 | .71 | .65 | 2.9 | 3.3 | 3.4 | 3.2 |
| Brahman | Hereford | 3.2 | 3.3 | 3.8 | 3.4 | 10.5 | 10.9 | 10.8 | 10.7 | .43 | .49 | .57 | .50 | 3.1 | 3.1 | 3.7 | 3.3 |
| | Angus | 3.5 | 3.9 | 3.9 | 3.8 | 10.8 | 11.2 | 11.4 | 11.1 | .52 | .64 | .63 | .60 | 3.6 | 3.9 | 4.1 | 3.9 |
| | Average | 3.3 | 3.6 | 3.9 | 3.6 | 10.6 | 11.0 | 11.1 | 10.9 | .48 | .56 | .60 | .55 | 3.3 | 3.5 | 3.9 | 3.6 |
| Sahiwal | Hereford | 3.1 | 3.2 | 3.6 | 3.3 | 10.2 | 10.5 | 10.9 | 10.5 | .45 | .47 | .54 | .49 | 2.8 | 2.8 | 3.6 | 3.1 |
| | Angus | 3.3 | 3.6 | 3.6 | 3.5 | 10.5 | 10.9 | 11.2 | 10.9 | .52 | .61 | .62 | .58 | 3.4 | 3.5 | 3.7 | 3.5 |
| | Average | 3.2 | 3.4 | 3.6 | 3.4 | 10.4 | 10.7 | 11.0 | 10.7 | .48 | .54 | .58 | .53 | 3.1 | 3.1 | 3.6 | 3.3 |
| Pinzgauer | Hereford | 2.7 | 3.0 | 3.2 | 3.0 | 10.9 | 11.1 | 11.4 | 11.2 | .33 | .42 | .48 | .41 | 3.1 | 3.1 | 3.4 | 3.2 |
| | Angus | 3.1 | 3.4 | 3.7 | 3.4 | 11.1 | 11.5 | 11.7 | 11.5 | .46 | .51 | .61 | .52 | 3.4 | 3.9 | 4.2 | 3.9 |
| | Average | 2.9 | 3.2 | 3.5 | 3.2 | 11.0 | 11.3 | 11.6 | 11.3 | .40 | .47 | .54 | .47 | 3.3 | 3.5 | 3.8 | 3.5 |
| Tarentaise | Hereford | 2.9 | 2.8 | 3.7 | 3.1 | 10.7 | 11.3 | 11.1 | 11.0 | .36 | .33 | .52 | .40 | 3.4 | 3.4 | 4.1 | 3.6 |
| | Angus | 3.2 | 3.5 | 3.7 | 3.5 | 10.9 | 11.4 | 11.4 | 11.2 | .41 | .51 | .52 | .48 | 3.9 | 4.4 | 4.7 | 4.3 |
| | Average | 3.0 | 3.1 | 3.7 | 3.3 | 10.8 | 11.3 | 11.3 | 11.1 | .38 | .42 | .52 | .44 | 3.7 | 3.9 | 4.4 | 4.0 |
| Average of all sires | Hereford | 3.0 | 3.2 | 3.6 | 3.3 | 10.6 | 10.9 | 11.0 | 10.8 | .42 | .46 | .56 | .48 | 3.1 | 3.2 | 3.6 | 3.3 |
| | Angus | 3.3 | 3.6 | 3.8 | 3.6 | 10.8 | 11.2 | 11.3 | 11.1 | .51 | .59 | .62 | .57 | 3.4 | 3.8 | 4.0 | 3.7 |
| | Average | 3.2 | 3.4 | 3.7 | 3.4 | 10.7 | 11.0 | 11.2 | 11.0 | .46 | .53 | .59 | .53 | 3.3 | 3.5 | 3.8 | 3.5 |

Table 18.4. Carcass percentages of retail product, fat trim, and bone of different crossbred types.^a

| Breed of steer | | Retail product, % ^b | | | | Fat trim, % | | | | Bone, % | | | |
|----------------------|----------|--------------------------------|------|------|------|-------------|------|------|------|---------|------|------|------|
| Sire | Dam | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg |
| Angus Hereford | Hereford | 69.2 | 66.4 | 63.5 | 66.3 | 18.3 | 21.6 | 24.8 | 21.6 | 12.5 | 12.0 | 11.7 | 12.1 |
| | Angus | 67.3 | 65.0 | 62.8 | 65.0 | 20.6 | 23.3 | 25.8 | 23.2 | 12.1 | 11.7 | 11.4 | 11.8 |
| | Average | 68.3 | 65.7 | 63.1 | 65.7 | 19.4 | 22.5 | 25.3 | 22.4 | 12.3 | 11.9 | 11.6 | 11.9 |
| Brahman | Hereford | 70.5 | 69.3 | 66.3 | 68.7 | 16.0 | 17.8 | 21.1 | 18.3 | 13.5 | 12.9 | 12.6 | 13.0 |
| | Angus | 69.4 | 67.2 | 65.3 | 67.3 | 18.1 | 21.0 | 22.8 | 20.6 | 12.5 | 11.8 | 11.8 | 12.0 |
| | Average | 70.0 | 68.2 | 65.8 | 68.0 | 17.0 | 19.4 | 22.0 | 19.5 | 13.0 | 12.4 | 12.2 | 12.5 |
| Sahiwal | Hereford | 70.9 | 69.4 | 66.3 | 68.9 | 15.9 | 17.5 | 21.3 | 18.2 | 13.2 | 13.1 | 12.4 | 12.9 |
| | Angus | 69.4 | 67.6 | 65.3 | 67.4 | 18.2 | 20.8 | 23.1 | 20.7 | 12.4 | 11.6 | 11.6 | 11.9 |
| | Average | 70.1 | 68.5 | 65.8 | 68.1 | 17.1 | 19.2 | 22.2 | 19.5 | 12.8 | 12.4 | 12.0 | 12.4 |
| Pinzgauer | Hereford | 70.9 | 69.1 | 66.8 | 68.9 | 15.3 | 17.5 | 20.1 | 17.6 | 13.7 | 13.5 | 13.1 | 13.4 |
| | Angus | 69.3 | 67.6 | 64.5 | 67.1 | 17.7 | 19.6 | 23.6 | 20.3 | 13.0 | 12.9 | 12.0 | 12.6 |
| | Average | 70.1 | 68.3 | 65.6 | 68.0 | 16.5 | 18.5 | 21.8 | 19.0 | 13.4 | 13.2 | 12.5 | 13.0 |
| Tarentaise | Hereford | 70.1 | 69.4 | 66.1 | 68.5 | 16.7 | 17.2 | 22.0 | 18.6 | 13.1 | 13.4 | 11.9 | 12.8 |
| | Angus | 70.2 | 67.3 | 65.1 | 67.5 | 17.5 | 20.7 | 23.2 | 20.5 | 12.4 | 12.0 | 11.7 | 12.0 |
| | Average | 70.2 | 68.3 | 65.6 | 68.0 | 17.1 | 19.0 | 22.6 | 19.6 | 12.7 | 12.7 | 11.8 | 12.4 |
| Average of all sires | Hereford | 70.3 | 68.7 | 65.8 | 68.3 | 16.5 | 18.3 | 21.9 | 18.9 | 13.2 | 13.0 | 12.3 | 12.8 |
| | Angus | 69.1 | 66.9 | 64.6 | 66.9 | 18.4 | 21.2 | 23.7 | 21.1 | 12.5 | 12.0 | 11.7 | 12.1 |
| | Average | 69.7 | 67.8 | 65.2 | 67.6 | 17.4 | 19.7 | 22.8 | 20.0 | 12.9 | 12.5 | 12.0 | 12.5 |

^aDetailed carcass cutout data obtained on an average of 45 steers per sire breed by slaughter group subclass for all sire breeds except Tarentaise (average of 34 were included in each slaughter group).

^bRetail product, % = Actual yield of boneless, closely trimmed beef from the carcass.

Table 18.5. Warner-Bratzler shear values and taste panel scores of rib steaks from different crossbred types.

| Breed of steer | | W-B shear, lb. ^a | | | | T.P. tenderness ^b | | | | T.P. flavor ^b | | | | T.P. juiciness ^b | | | |
|----------------------|----------|-----------------------------|------|-----|-----|------------------------------|-----|-----|-----|--------------------------|-----|-----|-----|-----------------------------|-----|-----|-----|
| Sire | Dam | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg | S1 | S2 | S3 | Avg |
| Angus Hereford | Hereford | 7.2 | 7.4 | 6.5 | 7.0 | 7.4 | 7.3 | 7.6 | 7.4 | 7.2 | 7.3 | 7.3 | 7.3 | 7.3 | 7.3 | 7.5 | 7.4 |
| | Angus | 7.4 | 7.9 | 6.9 | 7.4 | 7.2 | 7.1 | 7.5 | 7.2 | 7.1 | 7.0 | 7.0 | 7.0 | 7.1 | 7.1 | 7.1 | 7.1 |
| | Average | 7.3 | 7.7 | 6.7 | 7.2 | 7.3 | 7.2 | 7.5 | 7.3 | 7.1 | 7.1 | 7.1 | 7.1 | 7.2 | 7.2 | 7.3 | 7.2 |
| Brahman | Hereford | 9.4 | 8.8 | 7.3 | 8.5 | 5.9 | 6.1 | 6.6 | 6.2 | 6.9 | 6.9 | 7.2 | 7.0 | 6.4 | 6.8 | 6.9 | 6.7 |
| | Angus | 9.4 | 8.6 | 7.5 | 8.5 | 6.5 | 6.4 | 7.0 | 6.6 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.1 | 6.8 | 7.0 |
| | Average | 9.4 | 8.7 | 7.4 | 8.5 | 6.2 | 6.3 | 6.8 | 6.4 | 6.9 | 7.0 | 7.1 | 7.0 | 6.7 | 7.0 | 6.8 | 6.8 |
| Sahiwal | Hereford | 9.9 | 10.1 | 8.3 | 9.4 | 5.6 | 4.9 | 6.1 | 5.5 | 6.8 | 6.8 | 6.9 | 6.9 | 6.8 | 6.8 | 6.9 | 6.8 |
| | Angus | 9.9 | 9.4 | 8.1 | 9.1 | 6.1 | 5.9 | 6.3 | 6.1 | 7.0 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 7.0 | 6.9 |
| | Average | 9.9 | 9.8 | 8.2 | 9.3 | 5.8 | 5.4 | 6.2 | 5.8 | 6.9 | 6.9 | 6.9 | 6.9 | 6.9 | 6.8 | 7.0 | 6.9 |
| Pinzgauer | Hereford | 8.4 | 7.3 | 7.0 | 7.6 | 7.0 | 7.0 | 7.4 | 7.1 | 7.2 | 7.3 | 7.3 | 7.2 | 7.2 | 7.1 | 7.3 | 7.2 |
| | Angus | 7.9 | 7.0 | 6.5 | 7.1 | 6.5 | 7.2 | 7.6 | 7.1 | 6.9 | 7.2 | 7.2 | 7.1 | 6.8 | 7.1 | 7.4 | 7.1 |
| | Average | 8.1 | 7.2 | 6.7 | 7.3 | 6.8 | 7.1 | 7.5 | 7.1 | 7.1 | 7.2 | 7.3 | 7.2 | 7.0 | 7.1 | 7.3 | 7.1 |
| Tarentaise | Hereford | 8.9 | 7.4 | 7.6 | 8.0 | 6.2 | 6.7 | 6.9 | 6.6 | 6.9 | 7.0 | 7.3 | 7.1 | 6.9 | 6.9 | 7.0 | 6.9 |
| | Angus | 9.4 | 8.2 | 7.0 | 8.2 | 6.2 | 6.9 | 7.2 | 6.7 | 7.1 | 7.3 | 7.1 | 7.2 | 6.9 | 7.0 | 7.1 | 7.0 |
| | Average | 9.1 | 7.8 | 7.3 | 8.1 | 6.2 | 6.8 | 7.0 | 6.7 | 7.0 | 7.2 | 7.2 | 7.1 | 6.9 | 7.0 | 7.0 | 7.0 |
| Average of all sires | Hereford | 8.7 | 8.2 | 7.3 | 8.1 | 6.4 | 6.4 | 6.9 | 6.6 | 7.0 | 7.1 | 7.2 | 7.1 | 6.9 | 7.0 | 7.1 | 7.0 |
| | Angus | 8.6 | 8.2 | 7.2 | 8.1 | 6.5 | 6.7 | 7.1 | 6.8 | 7.0 | 7.0 | 7.0 | 7.0 | 6.9 | 7.1 | 7.1 | 7.0 |
| | Average | 8.8 | 8.2 | 7.2 | 8.1 | 6.5 | 6.5 | 7.0 | 6.7 | 7.0 | 7.1 | 7.1 | 7.1 | 6.9 | 7.0 | 7.1 | 7.0 |

^aWarner-Bratzler shear is a measure of the pounds of force required to shear one-half inch cores of steaks cooked at 350°F to 150°F internal temperature and cooled for 30 minutes at room temperature. Warner-Bratzler shear was measured on the same steers from which detailed carcass cutout data were obtained.

^bTaste panel scores are based on a 9-point scale, with higher scores indicating more flavor, juiciness, or tenderness. Traits taste panel members evaluated were measured on steaks from an average of 6 steers per sire-dam breed group per slaughter date per year.