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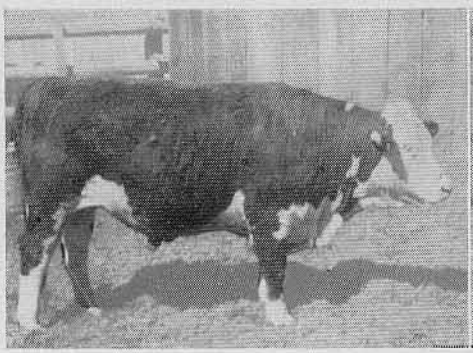
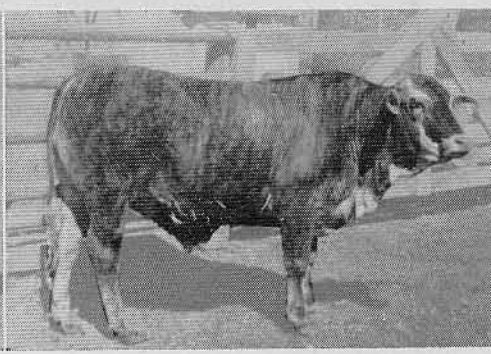
Brahman x Hereford With Herefords

A COMPARISON





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AGRICULTURAL EXPERIMENT STATION • OREGON STATE COLLEGE • CORVALLIS
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A Comparison of---

Brahman x Hereford Crossbreds

For Oregon, research finds crossbreds not superior to Herefords . . .

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With Herefords

Farris Hubert Jr.,* E. N. Hoffman, W. A. Sawyer, Ralph Bogart, A. W. Oliver

Brahman x Hereford crossbreds are not recommended for eastern Oregon beef production.

Two years' tests show that crossbreds don't measure up to Herefords in wintering gain or in carcass grade.

Thirty-four Herefords and 34 first generation Hereford x Brahman crossbreds were used in the study. Twenty from each group were tested in 1951, 14 in 1952. The animals were compared as weaners on a winter growing ration, and as yearlings on sagebrush-bunchgrass range plus meadow aftermath feeding, at the Squaw Butte-Harney Branch Experiment Station near Burns. Then they were moved to the Malheur Experimental Area near Ontario for dry-lot feeding trials. After that, they were slaughtered and carcass values recorded.

Here's what was found:

Weaners. Little difference in winter gain showed up in a mild winter. But in a severe winter, Herefords gained more than crossbreds. All animals were thrifty, however, at the end of the winter feeding period.

Yearlings. The crossbreds made higher average daily gains while on sagebrush-bunchgrass range, and continued to gain slightly more on meadow aftermath than did Herefords the first year. In the second year, crossbred *heifers* gained more than any other group on the meadow, but crossbred *steers* gained the least. This is probably due to the nervous temperament of crossbred steers.

Dry-lot feeding. Hereford steers gained more per day than crossbred steers. Feed costs per pound of gain were 2 cents greater for crossbreds. There was no difference between heifers of both groups.

Dressing percentage between the groups was about the same, but a higher percentage of Hereford carcasses graded choice than did crossbred carcasses. Crossbreds had longer hind legs as measured from the hock to the H-bone. The result was a long, tapering round which lacked the bulge that is desired by packers.

There was no difference in percentage of wholesale cuts of meat.

Since the study showed that crossbreds offer no advantage over Herefords, their inclusion in a beef production program in eastern Oregon is not recommended.

More detailed method and result figures, as well as a discussion of findings, are reported in the following pages.

FIGURE 1. Hereford calves in winter lot at Burns. Note that only protection is a board fence.

Brahman and Brahman crossbred cattle have found wide acceptance in southern areas of the United States. Much of the popularity of such cattle has been due to their ability to thrive in hot, humid climates. Also, claims have been made regarding the ability of Brahmans to withstand drought and poor feed conditions.

Interest of beef cattle producers in the adaptability of Brahman crossbred cattle to the eastern Oregon sagebrush range area resulted in the Squaw Butte - Harney Experiment Station initiating comparisons of the crossbreds with Herefords.

The comparisons were conducted, during 1950, 1951, and 1952 in southeastern Oregon near Burns, with first generation Brahman x Herefords compared with commercial Herefords. The animals were compared as weaners on a winter growing ration, and as yearlings on sagebrush-bunchgrass range, followed by a short period on meadow aftermath in the Harney Valley. A study of grazing habits of the animals on the summer range also was made.

A comparison of the animals in the feed lot as long yearlings was continued by the Malheur Experimental Area at Ontario, Oregon, which is about 130 miles east of Burns.

Study Area and Climate

The animals were wintered near Burns, Oregon, at an elevation of approximately 4,000 feet. The winter weather of 1951-52 was considerably more severe than that during the 1950-51 season (see Table 1). The frequency and amount of snowfall during the second winter is believed to have increased the effects of the low temperatures on the animals. The only protection provided during the winter was a board fence at Burns (Figure 1) and at Ontario. A limited amount of straw for bedding was provided at

Burns during the wintering studies, but ample bedding was provided at all times during the fattening studies.

The cattle were moved to the sagebrush-bunchgrass range, approximately 40 miles west of Burns, for the summer grazing season (Figure 2). The elevation ranges from 4,500 to 5,500 feet over the station. The animals were grazed together in 2,200-acre, fenced ranges typical of southeastern Oregon which is primarily big sagebrush *(Artemisia tridentata)* and bunchgrasses. Maximum summer temperatures seldom exceeded 90° F. during the 2-year period.

Forage available during the short time spent on the meadow was mostly mature stubble and scattered hay left from haying operations. The meadow was the wet land type with over 80 per cent of the forage consisting of rush *(Juncus* spp.) and sedge *(Carex* spp.).

The feed-lot study was conducted at Ontario in the Snake River Valley at an elevation of 2,150 feet. Winter temperatures are much less severe than in the Burns area; but, like the latter, the area usually has dry winters.

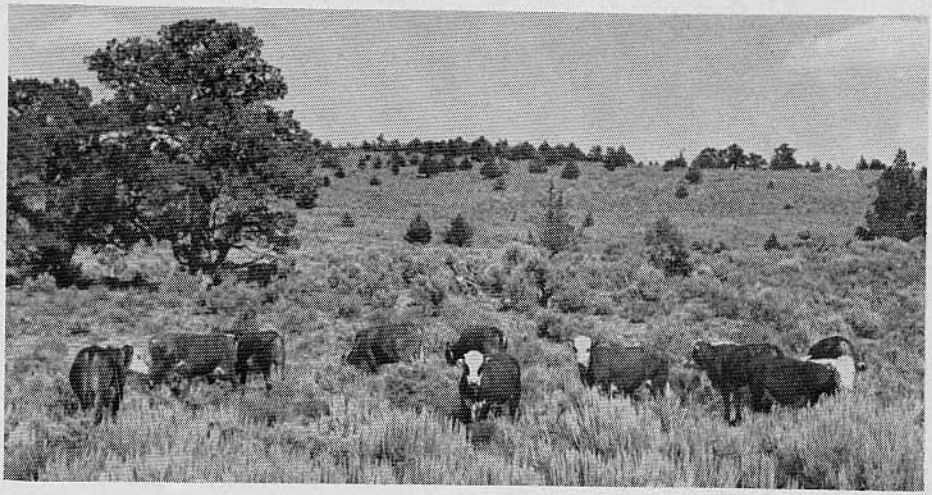
Experimental Animals

Herefords used during the 2-year study were produced by the herd of commercial cattle maintained by the Squaw Butte Station.

Brahman x Hereford crossbreds used during 1950-51 were from station cows bred to a Brahman sire[1]. (Figure 3). Crossbreds used during the second year (1951-52) were purchased as weaners on a ranch 30 miles north of Burns. A representative of the American Brahman Breeders Association recommended the calves as being sired by a good representative of the Brahman breed. The cows that produced these crossbred calves were commercial Herefords.

1 Loaned to the Station by Gill Cattle Company of Frenchglen, Oregon.

FIGURE 2. Hereford and crossbred steers grazing on sagebrush-bunchgrass range during summer.



How Research Was Conducted

Ten Hereford steers and 10 Hereford heifers were compared with an equal number of Brahman x Hereford first generation crossbred steers and heifers during 1950-51. Eight steers and 6 heifers from each group were compared during the second year.

The animals were divided according to sex and breed into 4 dry lots for the wintering phase of the study. All animals were moved to summer range during late April, where they grazed together. They were moved from the sagebrush range back to Harney Valley during late September. After grazing together on meadow aftermath for approximately 1 month they were transported to the Malheur Experimental Area for the fattening phase of the study.

Winter feeding phase

The roughage portion of the winter ration was made up of native meadow hay and alfalfa. All animals were lot fed 2½ pounds of alfalfa, 1 pound of barley, and ½ pound of 43 per cent cottonseed meal once each day. The amount of meadow hay fed was controlled so all animals had available an equal calculated total digestible nutrient intake per pound of metabolic body weight (body weight raised to the 0.75 power). In this way all animals had an equal opportunity of gaining weight where it was not possible to balance average lot weights. Adjustments in meadow hay intake to compensate for body weight change were made every 28 days.

Salt, a salt-bonemeal mix, and water were always available.

Grazing habit phase

In the grazing habit phase of the study, individual steers of each group were observed continuously for two "grazing days"[2], at approximate 3 week intervals. A bell was attached around the neck of the animal being observed. With the aid of binoculars little difficulty was encountered in observing and recording the time spent at various activities. These were divided into the following categories: grazing, traveling when not grazing, drinking, salt licking, standing, and lying down. The distance traveled by the animal under observation was measured by plotting its position every 15 minutes on a detailed, contour map of the range. Different animals were selected at random for each observation period.

Fattening feeding phase

The fattening ration consisted of first and second cutting good quality chopped alfalfa hay (protein content of 11.96 per cent) and ground ear corn (protein content of 7.81 per cent). The animals were fed twice daily in dry lot for 136 days. The amount of corn fed was the same per animal but the hay was fed free choice. There was some variation in hay consumption. Thus, the total ground ear corn consumed per head was 1,500 pounds, whereas the hay consumed varied from 1,730 to 2,232 pounds per head. Salt and water were provided in the lots at all times.

Cattle from the feed lot in 1951-52 were sent to Valley Packing Co., Salem, where dressing per cent and carcass grades were obtained. The cattle in 1952-53 were sent to Steen

2 "Grazing day" refers to the period from 4 a.m. until 11 p.m. Continuous 48-hour observations indicate that the movement between the hours of 11 p.m. and 4 a.m. were not important from the standpoint of grazing activity.

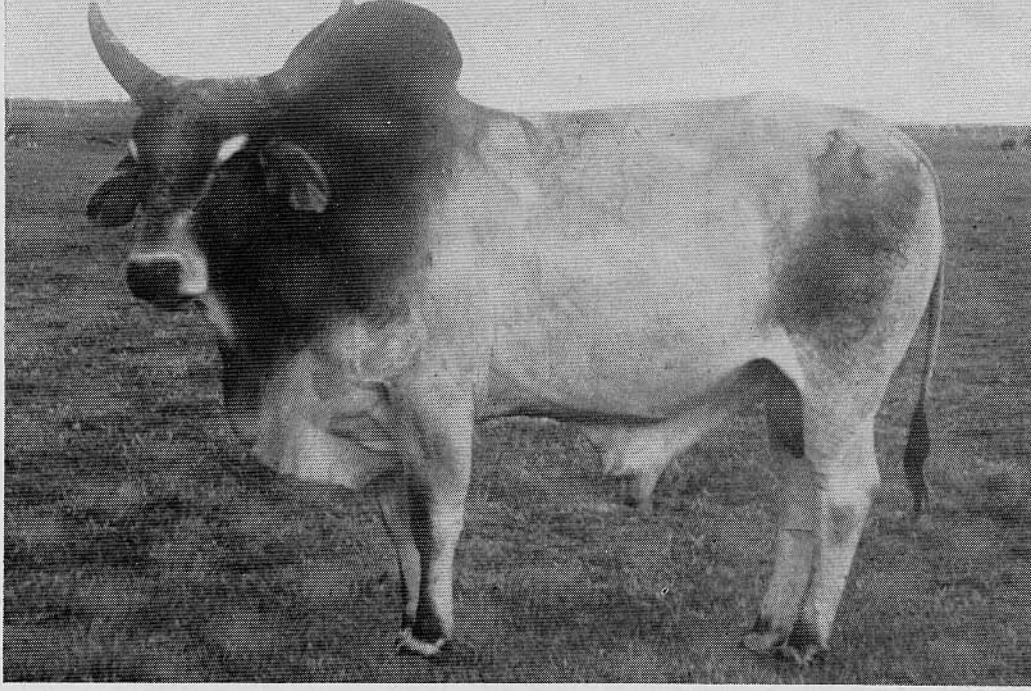


FIGURE 3. Brahman bull used to sire calves for 1950-51 study. This bull was selected from a group of about 30 Brahman bulls with beef type and conformation in mind.

Bros., Albany, where dressing per cent, carcass grades, wholesale cut outs, and other measurements were taken. Grades for both years were placed on the carcasses by a federal grader.

What Was Found

Gains during wintering period

During the relatively mild winter of 1950-51 (Table 1) very little difference in body weight gain was found among lots (Table 2). Statistical analysis showed no significant[1] differences or interactions existing between breeds or sexes.

All animals gained significantly less during the winter of 1951-52 than during the previous winter. The severe winter weather was believed to be responsible for the reduction in gains since the same ration was fed at the same rate during both winters.

1 Differences referred to as being significant are statistically significant at the 5 per cent level of probability.

Table 1. Summary of Average Minimum Temperature, Days With Temperature Below 10° F., and Days With Snow Covering Ground During Wintering Periods of 1950-51 and 1951-52

Year	Average minimum temperature	Days below 10° F.	Days of snow cover
	Degrees F.		
1950-51	21	13	51
1951-52	15	43	89

Table 2. Summary of Average Winter Gains Made by Brahman x Hereford Crossbred and Hereford Weaner Calves, 1950-51 and 1951-52

Year	Brahman x Hereford				Hereford			
	Steer		Heifer		Steer		Heifer	
	Gain per day	Total gain	Gain per day	Total gain	Gain per day	Total gain	Gain per day	Total gain
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1950-51[1]	0.96	134	0.96	134	1.05	147	0.90	126
1951-52[2]	0.25	30	0.47	57	0.69	84	0.53	65
Average	0.64	82	0.77	96	0.89	116	0.76	96

[1]December 9, 1950 through April 27, 1951.
[2]December 27, 1951 through April 27, 1952.

The Herefords, however, gained significantly more than the crossbreds.

It was interesting to note that the Brahman x Hereford heifers made a larger gain than the crossbred steers during the second winter. This resulted in a significant interaction between breed and sex, since the Hereford steers made a more rapid gain than the Hereford heifers. Equal gains were made by the crossbred steers and heifers during the milder winter of 1950-51. This finding may indicate that the crossbred heifers had a better ability to tolerate the cold weather than did the steers. The steers later made the most rapid average gains in all cases on summer range. A contributing factor to the interaction was that the crossbred steers appeared to be more nervous than the heifers during the second year. All animals in the study were in a healthy condition at the end of both wintering periods.

Summer gains on sagebrush range

The Brahman x Hereford crossbreds made significantly greater average gains than the Herefords during both summer grazing seasons (Table 3). It was also found that steers of the same breeding gained significantly more than the heifers in all cases.

All animals made significantly greater average weight gains during the summer of 1952 than in 1951. Two factors probably contributed to the increased gains during the second summer. (1) More range forage was available to the animals, and (2) smaller gains were made during the severe winter prior to the summer grazing period.

Gains on meadow aftermath

The Brahman x Hereford crossbreds gained significantly more on the

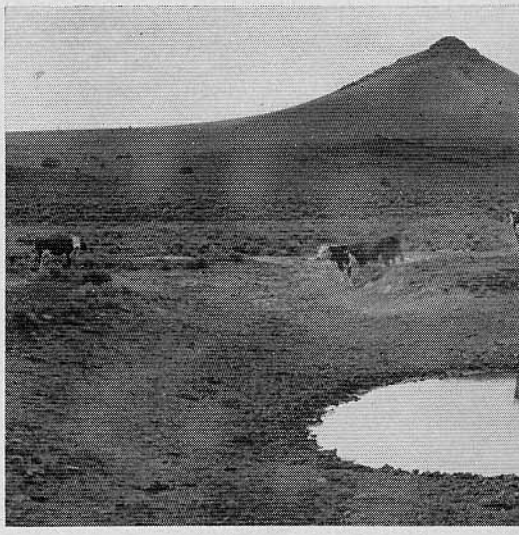


Table 3. Summary of Average Gains on Sagebrush Range Made by Brahman x Hereford Crossbred and Hereford Yearlings, 1951 and 1952

Year	Brahman x Hereford				Hereford			
	Steer		Heifer		Steer		Heifer	
	Gain per day	Total gain	Gain per day	Total gain	Gain per day	Total gain	Gain per day	Total gain
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1951[1]	1.67	184	1.58	174	1.47	162	1.41	155
1952[2]	1.76	194	1.72	189	1.64	180	1.48	163
Average	1.71	189	1.63	182	1.54	171	1.44	159

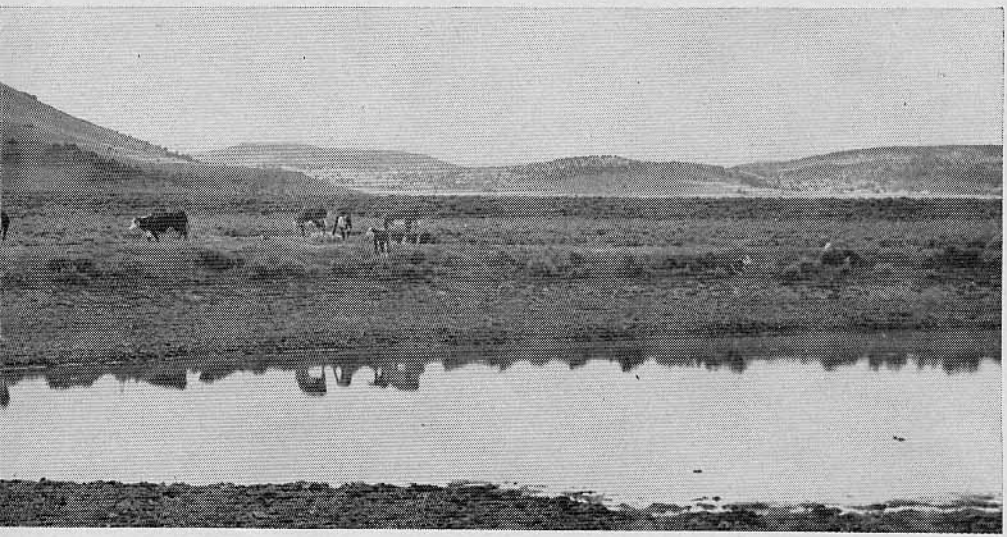
[1]May 5—August 23.
[2]May 13—September 16.

meadow aftermath during the first year (Table 4) and the crossbred heifers more than either the Hereford steers or heifers during the second year. But the crossbred steers gained less than any other group. The continued nervouness of the crossbred steers during the second year was probably a factor in their poor performance on the meadow.

Grazing habit comparison

Under the conditions of this study, variation in grazing activities studied among animals of the same breed was greater than differences between breeds. During the first summer's observation both Herefords and crossbreds, under poor range conditions, would travel at least 3½ miles from water at various times in grazing. This was the maximum distance the animals could travel from water in the fenced range. Gains of all animals were reduced under such treatment.

FIGURE 4. Shown below is part of Squaw Butte range area between water hole and range fence.



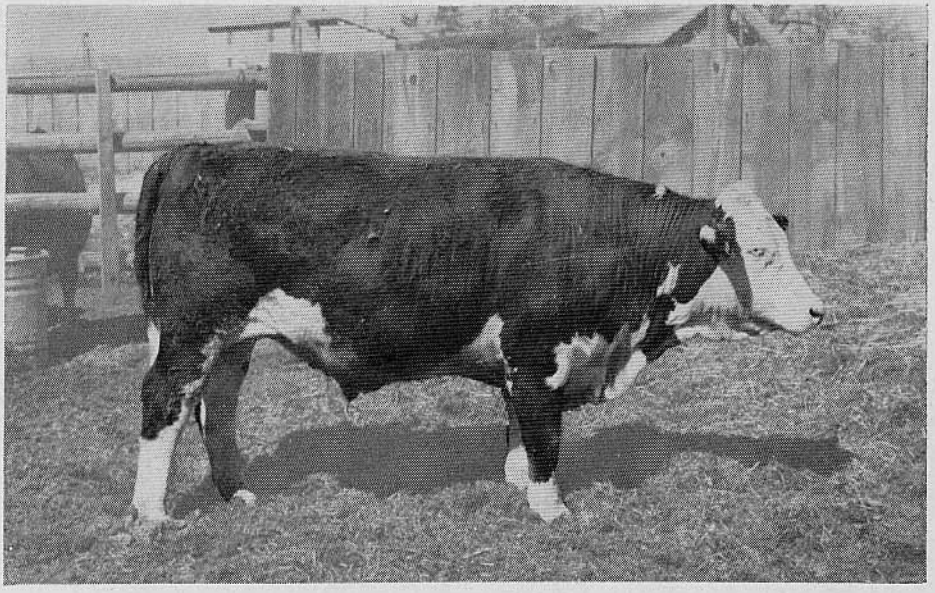


FIGURE 5. Hereford steer at completion of fattening phase. Note smoothness and blockiness, compared with Figure 6.

Fattening period

Since the two winters, 1951-52 and 1952-53 were normal or above in temperature (Table 5) the Brahman x Hereford crossbreds should not have been unfavorably affected by unusually cold temperatures during the fattening period.

Comparison of Brahman x Hereford heifers with grade Hereford heifers for one year (Table 6) shows clearly that the two groups gained at the same rate and with the same feed costs per unit of gain.

Brahman x Hereford steers were compared with grade Hereford steers two years in winter fattening. In the first year when the crossbred steers were produced by cows in the herd of the Squaw Butte-Harney Station, the gains made and the feed costs per unit of gain were the same for the two

Table 4. Summary of Average Gains on Meadow Aftermath Made by Brahman x Hereford Crossbred and Hereford Yearlings, 1951 and 1952

Year	Brahman x Hereford				Hereford			
	Steer		Heifer		Steer		Heifer	
	Gain per day	Total gain	Gain per day	Total gain	Gain per day	Total gain	Gain per day	Total gain
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
1951[1]	0.78	26	0.48	16	0.18	6	0.26	9
1952[2]	0.01	0	0.26	9	0.19	6	0.17	6
Average	0.43	13	0.40	12	0.19	6	0.22	8

[1]September 22—October 25.
[2]October 1—November 14.

Table 5. Summary of Average Minimum Temperature, Number of Days With Temperature Below 10° F., Number of Days With Precipitation, and Total Precipitation for the Fattening Period (136 Days)

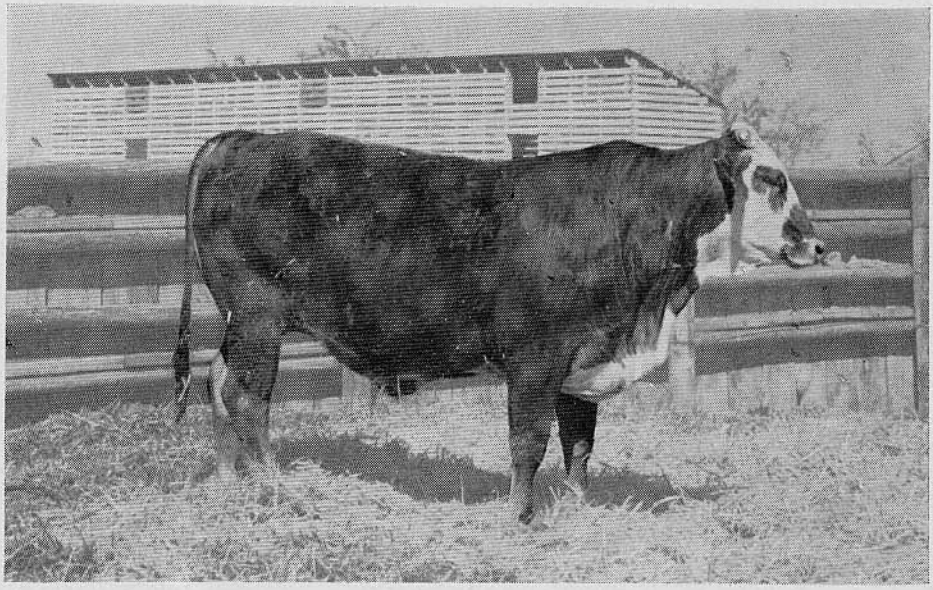
Year	Average minimum temperature	Days below 10° F.	Days with precipitation	Total precipitation
	Degrees F.			*Inches*
1951-52	22.6	15	53	5.51
1952-53	30.0	1	54	5.38

groups during the winter fattening period. During the second trial, however, in which Brahman x Hereford steers were compared with grade Hereford steers in the feed lot, the Hereford steers gained more rapidly and at a much lower feed cost than was the case with the crossbred steers. These crossbred steers were not produced by the cows in the Squaw Butte-Harney herd. (See page 5).

Combined results of the two years show a significantly greater gain for the Hereford steers over the crossbred steers but no difference in rate of gain of the two groups of heifers (Table 6).

During the fattening period, Brahman x Hereford cattle in the first year appeared docile and showed no greater nervousness than Herefords. But during the second feeding trial, the crossbred steers were extremely nervous as compared to the Hereford steers. The two groups of heifers, however, differed little in temperament.

FIGURE 6. Crossbred steer. Note longer legs, heavier front quarter, and less plumpness of round. Compare with Figure 5.



The Hereford steers and heifers were more desirable as butcher animals than the Brahman x Hereford crossbred when they had finished the fattening phase (Figures 5 and 6).

Carcass studies

The dressing per cent of Brahman x Hereford crossbreds appeared greater than that of the Herefords (Table 7) but the difference was not statistically significant. Differences between groups would have to be large for significant differences to be apparent since the variation in dressing per cent within each group was great —as much as 7 per cent between the high and low. There was a significant difference between heifers and steers with the steers dressing a higher per cent (Table 7).

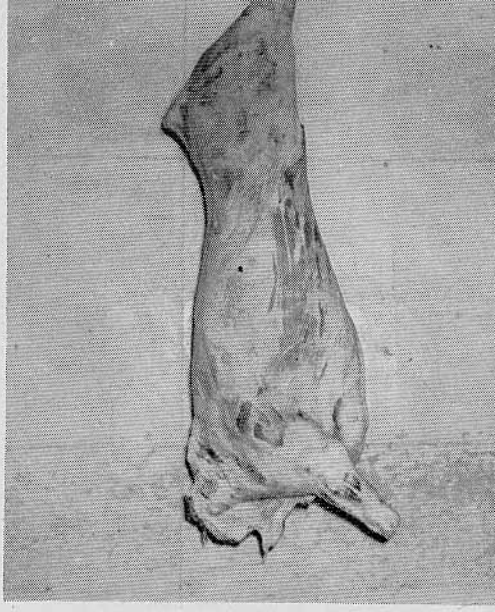


FIGURE 7. Carcass from a Hereford steer. Note even fleshing, shorter legs, more plump appearance, compared with Figure 8.

Table 6. Summary of Fattening Gains and Feed Costs for 2 Years' Work With Steers and 1 Year's Work With Heifers

	Brahman x Hereford		Hereford	
	Steers	Heifers	Steers	Heifers
Fattening gains	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Average initial weight	749.9	780.8	700.8	670.0
Average final weight	1046.6	1095.8	1031.6	979.0
Average total gain	296.7	315.0	330.8	309.0
Average daily gain	2.18	2.31	2.43	2.27
Feed consumed				
Average daily feed				
Hay	14.55	14.25	14.24	13.44
Corn	11.13	10.96	11.13	10.96
Average total feed				
Hay	1979.0	1939.0	1937.0	1828 6
Corn	1514.4	1490.6	1514.4	1491.6
Salt	11.43	9.1	13.1	13.3
Feed requirements per 100 pounds gain				
Hay	668.9	615.5	585.4	591.7
Corn	519.5	473.2	457.9	482.7
Feed costs				
Total hay	$ 27.76	$ 24.24	$ 26.87	$ 22.86
Total corn	41.65	40.99	41.65	41.02
Total salt	.23	.18	.26	.26
Total feed	69.64	65.41	68.78	64.14
Feed cost per pound gain	0.235	0.207	0 208	0.207

Figures based on average values of feed at the Experimental Area. Steers were fed for 2 years with 10 per group in 1951-52 and 8 per group in 1952-53. Heifers were fed only in 1952-53, and there were 6 crossbreds and 5 Herefords per group. The feeding period in 1951-52 was from November 26 to April 9; in 1952-53 it was from December 1 to April 16.

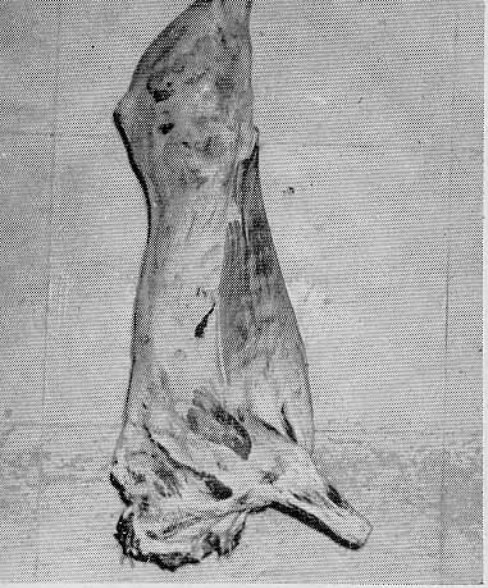


FIGURE 8. Carcass from a crossbred steer. Note uneven fleshing with lack of fat over loin and in flank, longer and less bulging round, and longer carcass. Compare with Figure 7.

Brahman x Herefords and Herefords differed markedly in carcass grades. The Herefords, both heifers and steers, were significantly higher than the corresponding crossbreds (Table 7). A greater portion of the carcasses from the Herefords graded choice whereas the majority of the carcasses from the crossbreds were good. The carcasses from the Herefords were more evenly fleshed, were shorter in the hind leg, and were more plump than carcasses from the Brahman x Hereford crossbreds (Figures 7 and 8).

The wholesale cuts are presented in Table 8 as the per cent of the carcass each of the cuts represents. It is apparent from the table that the Brahman x Hereford steers and heifers produced carcasses with the same percentage of wholesale cuts as carcasses from Hereford steers and heifers. The loins from the heifers made up a larger percentage of the carcass than loins from the steers. At the same time, chucks from the heifers made up a smaller percentage of the carcass than did the chucks from the steers (Table 8). However, no significant differences associated with breeding could be determined.

Carcass measurements for length of eye muscle and distance from H-bone to hock differed significantly between groups with the Brahman x Hereford cattle much longer from the H-bone to the hock (Figure 9) than the Herefords (Table 9). The steers showed a significantly longer eye muscle than the heifers but there were no differences associated with breeding.

Table 7. Dressing Per Cent and Carcass Grades of Brahman x Hereford and Hereford Fat Cattle[1]

Kind of animal	Number	Live weight	Chilled carcass weight	Dressing per cent	Carcass grades
		Pounds	*Pounds*		
Brahman x Hereford steers	18	1046.7	615.5	58.8	4 choice 14 good
Hereford steers	18	1031.7	588.2	57.0	11 choice 7 good
Brahman x Hereford heifers	6	1095.8	611.2	55.8	2 choice 4 good
Hereford heifers	5	979.0	543.6	55.5	3 choice 2 good

[1] Two years' work with steers and one year with heifers.

Table 8. Wholesale Meat Cuts Expressed as Percentage of the Carcass From Brahman x Hereford and Hereford Fat Cattle (1953)

Wholesale meat cut	Brahman x Hereford		Hereford	
	8 Steers	6 Heifers	8 Steers	5 Heifers
	Per cent	*Per cent*	*Per cent*	*Per cent*
Round	20.86	19.85	20.85	19.66
Flank	4.59	5.05	5.02	4.72
Loin	23.33	25.28	23.05	25.63
Rib	8.44	8.30	8.28	8.93
Chuck	27.73	25.34	27.27	26.04
Plate	8.24	8.84	8.30	8.48
Brisket	3.71	4.43	4.39	4.19
Fore Shank	3.53	3.15	3.52	3.09

Table 9. Measurements on Carcasses From Brahman and Hereford Fat Cattle (1953)

Carcass measurement	Brahman x Hereford		Hereford	
	8 Steers	6 Heifers	8 Steers	5 Heifers
	Cm.	*Cm.*	*Cm.*	*Cm.*
Width of eye muscle	2.3	2.2	2.3	2.3
Length of eye muscle	5.9	5.1	5.8	5.2
H-bone to 1st rib[1]	122.8	123.3	123.9	118.9
Hock to H-bone[1]	79.8	78.3	75.9	71.9

[1] See Figure 9 for information on where measurements were taken.

Discussion

Benefits from crossbreeding beef cattle might be expected to come primarily from two sources: (1) hybrid vigor, and (2) influence of combining valuable characteristics of the parents in the crossbred offspring.

It would seem that if Brahman crossbred cattle are to have a place in beef production of eastern Oregon, they should perform as well or better than crossbreds of the British breeds; i.e., Hereford, Angus, and Shorthorns. Some work done in Montana[1], where conditions might be considered as similar to eastern Oregon, showed that Hereford cows bred to Shorthorn bulls produced calves that gained 40 pounds more from weaning to 18 months of age than calves from Hereford cows bred to Hereford bulls. The animals were on a growing ration during the winter following weaning before going to grass. When the Montana results are considered, it appears that the Brahman x Hereford crossbreds in the present study did not equal the results of the Shorthorn x Hereford crossbreds.

Comparing the wintering ability of Brahman x Hereford crossbreds with Herefords was of special interest in this study. It was believed that if Brahman crossbreds could successfully compete with other beef breeds in eastern Oregon, they would have to withstand the winter weather on little more than a maintenance ration. The winter ration fed all animals was pur-

[1] Bradford Knapp, Jr., A. L. Baker, and R. T. Clark. Crossbred beef cattle for the northern great plains. U. S. D. A. Cir. 810. 1949.

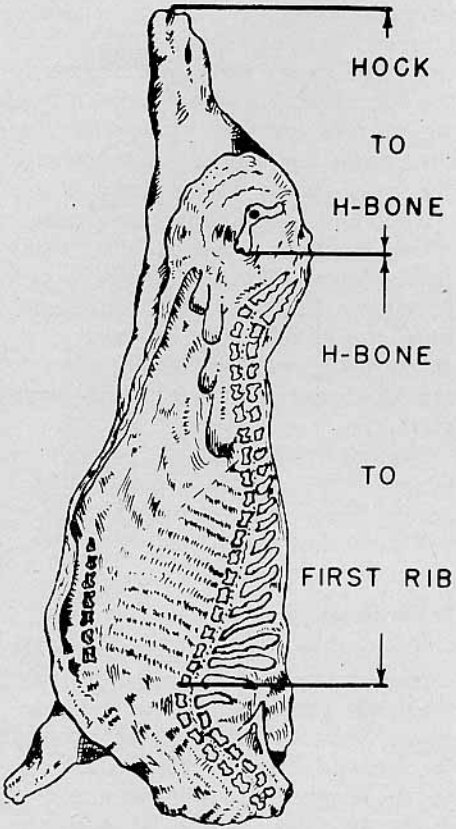


FIGURE 9. Beef carcass showing two measurements: hock to H-bone, H-bone to first rib.

posely held at a level that, under optimum conditions, would result in approximately a pound per day gain in weight by the Herefords. It was believed such a ration would give a critical test to the ability of all animals to metabolize and conserve sufficient energy to meet the needs of the various body functions.

The great heat tolerance of Brahman and Brahman crossbred cattle has long been recognized under practical conditions. Generally, Brahmans have not been given credit for withstanding cold temperatures as well as the European beef breeds.

A 12 per cent greater body surface area for heat dissipation is believed to be one of the major factors involved in the heat tolerant ability of Brahmans. The greater surface area would be expected to work to the animal's disadvantage when conservation of body heat is essential during cold weather. Reference has also been made to an apparent lower heat production, or lower basal metabolic rate, of Brahman dairy type cattle when compared with other dairy breeds[1]. It was also found that lowering environmental temperature to 9° F. caused the Brahmans to increase their heat production more than the other dairy breeds to maintain normal body temperature. This greater increase in heat production would be expected to reduce the efficiency of the Brahmans to convert feed to growth or other profitable production as temperatures decreased.

Brahmas have advantages

The difference in surface area between the Herefords and Brahman crossbreds used in this study is not known. However, it was apparent that the crossbreds did have a greater surface area per unit of body weight. The more nervous, "high strung," temperament observed in the crossbreds during the 2 years would also be expected to reduce their ability to conserve heat.

The summer temperature and humidity generally are not high enough in the high desert area of eastern Oregon to expect much advantage for the Brahman crossbreds over the Euro-

1 H. H. Kibler and Samuel Brody. XI. Effects of temperature, 50° to 105° F. and 50° to 90° on heat production and cardiorespiratory activities in Brahman, Jersey, and Holstein cows. Mo. Agr. Expt. Sta. Res. Bull. 464. 1950.

2 B. H. Schneider, "Cattle of India." The Cattlemen, 36(2) : July 1949.

pean breeds because of their heat tolerance trait. However, there are other characters credited to the Brahman cattle that could give them an advantage under conditions similar to the study area. Schneider[2], reporting on his observations of Brahman cattle under their native conditions, states, "They can utilize range that other cattle will not. Their longer legs and their ability to walk fast and trot with apparently little effort all contribute to this valuable asset." Any animal that can make more efficient use than is now made of low carrying capacity ranges where watering places are at a premium, could be a real asset to the sagebrush country.

Records on daily gains of steers on feed at the Malheur Station since its establishment and until cattle from the Squaw Butte-Harney Station were used show a general average of two pounds gain per day with small yearly fluctuations. The Hereford cattle from the Squaw Butte Station have averaged 2.3 pounds gain per day during the 3 years they have been fed at the Malheur Station. One would expect that this would be the case since selection for faster gains has been practiced at the Squaw Butte-Harney Station. It is important to note that in 1951-52 the crossbred cattle fed at the Malheur Station were out of cows of the Squaw Butte-Harney Station and during this year the crossbreds compared favorably with the Herefords of the Squaw Butte-Harney Station. In 1952-53 the crossbred cattle were from Hereford cows of another herd compared with Hereford cattle of the Squaw Butte-Harney Station. During this trial crossbred steers were far inferior to the Herefords. Evidently the hybrid vigor from crossing Brahman cattle onto cattle that had not been selected for faster gaining ability was not sufficient to equal the genetic improvement which had been made in the Squaw Butte-Harney Hereford herd through selection. Certainly the crossbreds were at a disadvantage in being compared with cattle in which selection for rapid rate of gain had been practiced.

No explanation can be offered for the rapid rate of gain of the crossbred heifers. Generally speaking, heifers will make less rapid gains than steers of the same breeding.

Three items of interest

Three things are of interest in the carcass studies. The percentage of the wholesale cuts was the same in carcasses from Brahman x Hereford as in carcasses from Hereford cattle and yet the length of the round as measured from the hock to the H-bone was much greater in the carcasses from the crossbred cattle. In addition, the carcasses from the Herefords graded much higher than those from the crossbreds. It appears, then, that the higher grading of the Hereford carcasses is due in part to the more plump conformation in addition to a difference in degree of finish. Certainly the more bulging round that was evident in the Hereford cattle would find a stronger retail demand than a longer and less bulging round.

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