



Typical Hampshire, Suffolk and Crossbred rams, left to right.

CROSSBRED PUREBRED HAMPSHIRE TESTING

MONTE BELL

G. E. BRADFORD

Crossbred yearling rams lived 20% longer according to experiments in western Glenn County than did their purebred Hampshire and Suffolk half-brothers. Mortality of all the yearling rams was high; 82% died before the fifth breeding season.

CALIFORNIA SHEEPMEN have generally believed that crossbred (Suffolk x Hampshire) rams were more vigorous than their straightbred counterparts. However, there have been few direct comparisons made of longevity of crossbred with straightbred rams that have included measurements under range conditions. These experiments began with the purchase of 28 rams on May 17, 1961, by Colyer Burress, manager of the Holmes Ranch in western Glenn County. Twenty-two of the rams were yearlings and 6 were two-year-olds—all bred and raised in the University of California's sheep flock at Davis. Numbers of rams in the test, by age and breed, were:

	Suf-folks	Hamp-shires	Cross-breds	Total
Two-year old	2	2	2	6
Yearling	10	5	7	22

The crossbreds had all been produced from matings of Hampshire rams to Suffolk ewes. The crossbred and Hampshire

rams were sired by the same three unrelated Hampshire sires. The Suffolk and crossbred rams were from ewes allotted at random to the two breeding groups. The purebred Suffolks were also sired by three unrelated rams.

At Davis

At Davis the rams had been raised on irrigated pasture to weaning at four months and continued on pasture with some grain supplement until about ten months of age (November). They were then fed alfalfa hay free-choice plus 1 to 1½ lb of grain per day until April. This is typical management for purebred flocks in the area.

The two-year-old rams had been used in two different flocks (one farm and one range) during 1960, one Hampshire, one Suffolk, and one crossbred in each flock. They were all wintered at Davis on pasture and hay with no grain supplement. While not necessarily representative of all Suffolk or Hampshire sheep, the rams studied were from several strains and from ewes of comparable quality. (Commercial ram producers may sometimes raise crossbreds produced from ewes inferior to those used for straightbred ram production.)

The 28 test rams were turned out on

the range at the Holmes Ranch with approximately 5,000 ewes and the regular ranch rams. Each year, prior to the breeding season, the test rams were counted and individually weighed. No rams were culled or sold until May 1965 when the few remaining test rams were culled because of epididymitis. All prior losses were considered death losses on the ranch.

Dry range

The rams and ewes were run on barley stubble and dry range during the summer and early fall and on native range with some alfalfa hay supplement when needed during late fall and winter. The breeding season was from June 1 through August 31 and the ewes started lambing late in October.

The average percentage of yearling rams remaining in the flock at the start of each breeding season is shown in the graph. Ram mortality was very high under these range conditions. At the start of the fifth breeding season only three (18%) of the original yearling rams remained.

The average number of service years of the rams is probably the best longevity measure. This number would decrease if any rams were culled for physical de-

Suffolk rams.



Hampshire rams.



RAMS OUTLIVE SUFFOLKS AND IN GLENN COUNTY PROGRAM



Suffolk-by-Hampshire crossbred rams.

fects, disease or other reasons. The average years of service for the Hampshire rams was 3.0 years, for the Suffolks 3.2 and for the crossbreds 3.4—suggesting some hybrid vigor for longevity. The average number of years of service for test rams of each age and breeding group was:

	Two-year-olds	Yearlings	Both
Hampshire	4.0	2.6	3.0
Suffolk	5.0	2.8	3.2
Crossbred	3.5	3.4	3.4
Total	4.2	3.0	3.2

Although the test sample was small, there was a consistent advantage in number of years of service for the two-year-old rams of all three breeds as compared with the rams first turned out at yearling age.

Average weight

This may have been due to the fact that the two-year-old rams were not as fat as the yearlings when turned out on this ranch in May 1961. The two-year-old rams weighed less than the yearlings (204 vs. 210 lb) at that time, whereas their average weight in 1960 as yearlings was 229 lb. This suggests that the two-year-olds were larger rams, but were carrying less condition as a result of having been through a year's service and of having received no grain during the winter. The two-year-old rams represented a more carefully selected group initially and, obviously, these six had survived the rigors of first year service.

Among yearlings the average weights of the Suffolk (209 lb) and crossbred (205 lb) rams were significantly greater than those of the Hampshire (190 lb) rams. The crossbreds were between the Suffolks and Hampshires in weight, but were much closer to the heavier breed,

indicating hybrid vigor. A similar pattern was shown by the the two-year-olds.

The average weight loss from spring to fall for all breeds was 32 ± 3 lb. The yearling rams suffered significantly greater summer weight losses the first two summers than did the two-year-old rams. The average spring weight of the rams that survived (212 lb) was not significantly different from the weight of rams that did not survive (209 lb). This indicates that size was not a major factor in survival differences.

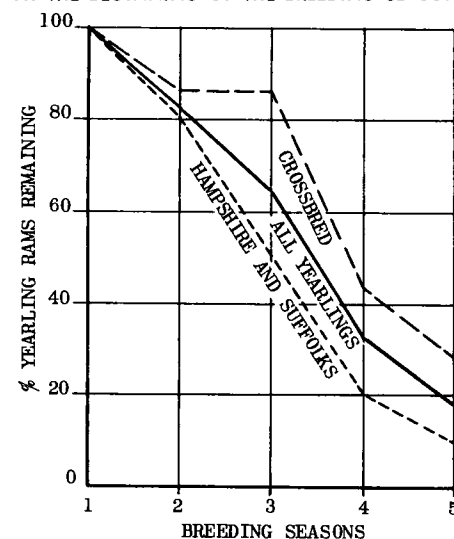
These results show that the crossbred rams were equal to their Suffolk, and superior to their Hampshire, parents in body weight and were superior to both parents in average number of years of service. Hybrid vigor was evidenced both in body weight and in survival. Yearling weight was not closely associated with survival. In this study the Suffolks were heavier and averaged slightly more years of service than did the Hampshire rams.

Ram numbers in this study were small, but based on the number of years service, the crossbred rams would be worth about 20% more than straightbred rams of comparable quality. The observation that rams in their second breeding season, when first turned out on the range, stand

up better than rams first turned out at yearling age substantiates observations by some sheepmen and suggests that yearling rams should be managed differently during their first year.

Monte Bell is Farm Advisor, Glenn County; and G. Eric Bradford is Associate Professor, and Animal Husbandman in the Experiment Station, University of California, Davis.

PERCENTAGE OF YEARLING RAMS REMAINING AT THE BEGINNING OF THE BREEDING SEASON



AVERAGE RAM WEIGHTS

	Yearling wt. at Davis (lb)	Holmes Ranch weights				1961 & 1962 spring-fall wt. differences		
		1961		1962				
		May	Nov.	May	Nov.	June	May	
Hampshire 2-year-olds	208	186	161	192	171	188	...	-20
Hampshire yearlings	190	191	155	198	156	184	165	-35
Suffolk 2-year-olds	245	230	196	246	226	243	248	-27
Suffolk yearlings	209	214	169	205	189	210	222	-33
Crossbred 2-year-olds	233	197	167	196	180	205	...	-25
Crossbred yearlings	205	218	174	229	193	213	237	-34
Total 2-year-olds	229	204	175	212	195	213	248	-26 ± 3
Total yearlings	204	210	167	211	186	207	220	-34 ± 3
Test average	202	209	169	211	188	209	226	-32 ± 3