

TABLE 3. LEAST-SQUARES MEANS FOR YEARLING BULL TRAITS (1984 TO 1990)

Breed	No. of Head	Birth Wt (lbs)	Off Test Height (in)	Off Test Weight (lbs)	-----Pelvic-----			Scrotal Circumference (cm)
					Height (cm)	Width (cm)	Area (cm ²)	
Hereford	769	84	49.0	1023	12.9	11.2	145	34.4
Polled Hereford	122	88	49.4	1030	13.0	11.2	146	33.5
Red Angus	242	78	48.9	1033	12.9	11.6	150	34.0
Angus	117	86	48.8	1030	13.1	11.3	148	34.2
Simmental	104	91	52.0	1160	13.3	12.2	161	36.2
Limousin	66	88	51.1	1063	13.3	12.0	161	31.5
Salers	62	84	52.4	1075	14.3	12.1	174	32.7
Gelbvieh	24	84	51.1	1069	13.5	11.6	160	34.1
Charolais	24	88	51.8	1061	13.5	12.2	165	33.5
Brangus	53	80	51.0	1002	14.6	11.4	167	32.6
System 1 Composite	65	87	49.7	1058	13.5	11.7	157	34.3
System 2 Composite	70	83	50.4	1060	14.2	11.2	161	33.6
Total or Average	1718	85	50.5	1055	13.5	11.6	158	33.7
Growth/day*			.021	1.97	.009	.01	.23	.016

* Difference between 10 month old bulls and bulls at 14 months.

Breeding heifers with very large pelvic areas to have calves over 95 lbs. will likely result in calving difficulty.

III. ADVANTAGES OF PELVIC MEASURING BULLS

Recent research results indicate pelvic area is highly heritable (40-60%). For this reason pelvic area can be increased with selection in both heifers and bulls. One must know what average pelvic size is in your heifers to determine what pelvic size you need for the bull if you want to make improvement. Generally, the bulls pelvic area does not grow as fast as heifers when fed to grow at the same daily gain. Young bulls, 9-11 months or bulls weighing less than 900 pounds are hard to measure because of the tight sphincter muscles around the anus. Soap or lubricant will be needed to measure these types of bulls. Table 3 shows you the average pelvic area for 10 different breeds of bulls which was collected at the Four Corner Bull Test over 7 years. These bulls averaged 12 months of age. There are small numbers in the Continental breeds so one must take this into consideration. The average pelvic area for 1,718 bulls was 158 cm² and weight was 1055 lbs. Their estimated pelvic growth from 10 to 14 months of age was .23 cm² per day. Continental and Brahman cross breeds are probably growing .25 cm² per day at a larger weight. Table 4 gives you the correlations or relationships for four traits including pelvic area. Three items of importance should be noted:

1. Pelvic area and scrotal circumference have a small relationship (.04).
2. Pelvic area is highly related to yearling weight (.41) and yearling hip height (.57).
3. Pelvic area is only slightly related to birth weight (.13).

For these reasons, ranchers who want to hold the size down on their cattle will have to be careful in selecting bulls with large pelvic areas. Since the relationship between birth weight and pelvic area is only small, we should be able to obtain bulls with good pelvic areas and light birth weights.

TABLE 4. RESIDUAL CORRELATIONS AMONG YEARLING BULL TRAITS
(1984-1990)

Trait	Yearling Hip Height	Yearling Weight	Pelvic Area	Scrotal Circumference
Birth Weight	.22	.24	.13	.08
Yearling Hip Height		.62	.57	.07
Yearling Weight			.41	.38
Pelvic Area				.04