

HAHN, J., FOOTE, R., and SEIDEL, G. (1969) Testicular Growth and Related Sperm Output in Dairy Bulls. *J. Anim. Sci.* 29: 41-47.

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## SERVING CAPACITY AS A SELECTION CRITERION

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Cattle have been selected for characters such as conformation and weight gain, but bull fertility, which has an obvious influence on net economic performance has been largely ignored. The procedures necessary to select for fertility *prior* to the first mating season have not been available until recently.

Serving capacity, tested as described by Blockey (1975, 1976) is related to paddock performance (Table 1). It has a heritability of 0.59 (Blockey, 1975) and has variability on which to select between bulls. Thus it can be considered as a selection criterion.

Observations of serving capacity in the Trangie herd did not fully support Blockey's results with respect to pregnancy rates but first estrous conception rates showed the same relationship (Table 1). Mating groups at Trangie were 20-25 females of mixed ages.

TABLE 1: Relationships of Serving Capacity to Pregnancy Rate and First Estrous Conception Rate.

Serving Capacity (a)	Blockey's Results (b)			Trangie Results (c)		
	No. of Bulls	C.R. 1st 21 days %	Preg. Rate %	No. Bulls	1st oestrous conception rate %	Preg. Rate %
0	1	4	4	4	38-50	80-96
1	3	15-28	26-33		-	-
2	2	21-40	67	2	59-63	86-95
3	2	55-68	91-93	1	63	88
4	2	57-59	89	1	62	87
5+	12	59-78	89-100	2	53-70	90-95

(a) Serving capacity measured as the number of serves achieved in a 40 minuted pen test.

(b) 22 bulls each mated to 35-40 heifers for 10 weeks. (unpublished)

(c) 10 bulls each mated to 20-25 females of mixed ages for eight weeks.

Differences between the two sets of results are possibly a function of lower pressure on Trangie bulls as well as possibly a difference in the % of females cycling. However the positive relationship of serving capacity with first estrous conception is most important because of its relationship to early calving in females.

Records of Angus females at Trangie show that the most important factor affecting fertility is how early a cow calves in the calving season (regression coefficient of chance of calving on previous calving day is  $.003 \text{ day}^{-1}$ ,  $P < .01$ , unpublished data). Body weights were relatively unimportant except in younger animals because these cows had mean body weights (487 kg) higher than most reported studies.

The potential for early calving is not measurable before females have been mated, but by selecting for high serving capacity in bulls we can indirectly influence this character.

Serving capacity is a practical selection procedure for improving herd fertility. If we can extrapolate from sheep results of high serving capacity rams producing daughters that have higher conception rates (Wilkinson and Kilgour, 1978) then it may have further benefits that we are not considering at this stage.

#### REFERENCES

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