SCROTAL CIRCUMFERENCE IN GRASS-FED BULLS EXTENSIVELY REARED IN COSTA RICA

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INTRODUCTION

Despite the relationship between scrotal circumference (SC) with semen quality and bull fertility (1), selection of sires by this parameter has been scarce in Costa Rica (2) and probably in other tropical countries. Most research in this field has been generated in grain-fed bulls from non-tropical areas, making necessary to establish standards for SC in grass-fed sires extensively reared in order to select breeding bulls by this characteristic.

MATERIALS AND METHODS

SC was measured in 2506 bulls from Zebu, and *Bos taurus* breeds extensively reared between 1.5 to 8 years of age located in four different climatic regions of Costa Rica. The sires were free from any clinical disease in the reproductive organs. The bulls were fed with mixed pastures and supplemented with salt blocks. Mean SC was adjusted for every breed by region, season, body condition score and testicular shape using GLM.

RESULTS AND DISCUSSION

Indobrasil bulls and its crosses, had the largest SC compared with any other breed at any age. In contrast, Nellore and its crosses showed the lowest values (Tables 1 and 2).

Table 1. SC (LSM ± SEM) in Zebu breeds disclosed by bull's age (years)

Age	Bra (n=866)	Ind (n=481)	Gyr (n=154)	Nel (n=147)
1.5-2	32.2±0.4 (n= 71)	34.2±0.6 (n= 37)	31.6±1 (n= 10)	31±0.6 (n= 26)
2.1-3	34.4±0.3 (n= 185)	36.1±0.4 (n= 101)	34.3±1 (n= 48)	33.2±0.5 (n= 39)
3.1-4	37±0.3 (n= 161)	37.9±0.3 (n= 134)	35.4±0.6 (n= 30)	35.5±0.6 (n= 25)
4.1-5	37.1±0.3 (n= 135)	39.1±0.4 (n= 85)	38.2±0.6 (n= 29)	36.8±0.6 (n= 27)
5.1-6	38±0.4 (n= 106)	39.6±0.5 (n= 51)	39.6±0.7 (n= 22)	37.7±0.7 (n= 21)
6.1-7	38±0.4 (n= 86)	40.1±0.6 (n= 30)	39.7±1 (n= 8)	39.5±1 (n= 9)
7.1-8	38.5±0.5 (n= 51)	40.7±0.7 (n= 22)	40.2±1 (n= 7)	-----
>8	37.8±0.4 (n= 71)	41.8±0.7 (n= 21)	-----	-----

Bra: Brahman; Ind: Indobrasil; Nel: Nellore.

The SC in the *Bos taurus* bulls (Table 3) were lower compared with data from non-tropical regions in these breeds (1). The results indicate the convenience of using local SC standards when selecting grass-fed bulls for breeding and point out the necessity of using SC as a selection criterion for bulls in tropical regions.

Table 2. SC (LSM ± SEM) in crossbred Zebu bulls disclosed by age (years)

Age	BrIn (n=166)	xZeb (n=111)	BrNe (n=84)
1.5-2	34.5±1 (n= 11)	32.2±1.3 (n= 6)	30.5±1.1 (n= 8)
2.1-3	35.5±0.5 (n= 50)	34.3±0.6 (n= 28)	33.2±0.6 (n= 28)
3.1-4	37.1±0.5 (n= 48)	36.7±0.6 (n= 32)	33.9±0.7 (n= 22)
4.1-5	37.6±0.6 (n= 28)	36.1±0.7 (n= 24)	35.6±0.7 (n= 19)
5.1-6	39.5±0.5 (n= 20)	39.7±1.1 (n= 8)	35.9±1.2 (n= 7)
6.1-7	39.9±1 (n= 9)	38±0.9 (n= 13)	-----

BrIn: BrahmanxIndobrasil; xZeb: Undefined Zebu crossbred; BrNe: BrahmanxNellore.

Table 3. SC (LSM ± SEM) in *Bos taurus* breeds disclosed by bull's age (years)

Age	Hols (n=157)	SGer (n=146)	BrSw (n=103)	Sime (n=91)
1.5-2	32.9±0.7 (n= 19)	33.1±0.5 (n= 39)	31.8±0.8 (n= 16)	31.0±0.9 (n= 13)
2.1-3	35.3±0.5 (n= 51)	35.9±0.6 (n= 32)	34.2±0.6 (n= 31)	34.9±0.6 (n= 31)
3.1-4	36.7±0.5 (n= 43)	36.8±0.8 (n= 19)	35.9±0.7 (n= 25)	36.1±0.7 (n= 21)
4.1-5	39.1±0.6 (n= 28)	37.8±0.8 (n= 15)	35.4±0.7 (n= 21)	38.1±0.8 (n= 15)
5.1-6	39.3±0.8 (n= 16)	38.1±0.8 (n= 16)	37.1±1 (n= 10)	39.3±0.1 (n= 11)
6.1-7	-----	41.1±0.8 (n= 17)	-----	-----
7.1-8	-----	40.5±1.1 (n= 8)	-----	-----

Hols: Holstein; SGer: St. Gertrudis; BrSw: Brown Swiss; Sime: Simmental.

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