Rev. prod. anim., 26 (3): 2014

Influence of Body Condition on Teaser Bulls Libido with Artificial Phymosis

Carlos Javier de Loyola Oriyés, Álvaro Alejandro Fiss Poll**, Roberto Vázquez Montes de Oca* and José Ángel Ramírez Oriyés****

*** Faculty of Agricultural Sciences, University of Camagüey, Cuba**

**** Specialist at the Biopharm Laboratories (LABIOFAM), Cuba**

***** Specialist at the Cuban Association of Animal Production, Cuba**

carlos.loyola@reduc.edu.cu

ABSTRACT

The influence of body condition on teaser bull libido from commercial dairy herds at the Cattle Raising Enterprise Triángulo 1, in the province of Camagüey, Cuba was assessed. A number of 140 crossbred males (Holstein / Zebu) aged 13-75 months old were examined from 2007 to 2010. A linear regression model to evaluate the libido (0-10 scale) was used as independent variable for the body condition (1-5 scale). Libido reached 6.59 points ± 1.751 (typical deviation), considered between good and very good, and the body condition was 2.96 ± 0.598 (typical deviation), optimum for estrus detection. Libido increase was observed in relation with body condition maybe due to the high incidence of anestrus, and also due to limited rest with cows in estrus.

Key Words: *bulls, sexual behavior, dairy herds*

INTRODUCTION

The bulls should not be so heavy, but they must have some energetic reserves that allow them to withstand the reproductive season (Kersting, Flopkins and Millar, 2001). Mating is one of the most important activities that take place during estrus marking. It shows the primary signs, so it is not advantageous to keep a teaser bull without proper sexual libido and adequate service capacity that ensure a high detection rate, especially during decreased rut.

Bulls aged 12-24 months old show progressive body and sexual maturity, and can be particularly vulnerable to factors affecting fertility (Ellis *et al.*, 2005). In fact, the body condition is best observed in specimens of 24-48 months old, when they reach the highest sexual maturity period (Vejarano, Sanabria and Trujillo, 2005). The most intense reproductive season reduces the bull´s physical condition; therefore, special care should be taken to guarantee weight gains until the necessary physical state is produced (Engelken, 2008).

Since the 1970s, a group of researchers (Ellis *et al.*, 2005; Vejarano *et al.*, 2005 and Engelken, 2008), have studied sexual libido, and in some cases, its relationship with body condition, but only in bovine studs. In the case of teasers, measuring libido was suggested by Holý (1987) and Morales (1996), though significant results concerning body condition were not produced.

The purpose of this research was to assess the effect of body condition on sexual libido of teaser bulls, and its influence on commercial dairy herds in Camagüey, Cuba.

MATERIALS AND METHODS

The research included 46 dairy herds under artificial insemination, at the Triángulo 1 Cattle Raising Enterprise, in the province of Camagüey, Cuba, from 2007 to 2010. Up to 140 Holstein X Zebu 13-75 months old crossbred teaser bulls used for visual estrus detection (auxiliary means by the teaser person to detect estrus), were examined. The teasers were not allowed to penetrate the cow´s vagina (complete service), due to artificial phymosis made by surgery, which was interpreted as "miming mating" during mounting and "hugging", and shows of the typical back banging on the kidney area.

Teasers were kept grazing for a year, in some cases with the cows all the time (50); and in others, at some times of the day (90). The male-female proportion did not exceed 1:3, considered by Holý (1987) as optimum.

The libido measure test was made by putting the teasers near the stable where the cows in heat were for 30 min to stimulate libido, following the method proposed by Bertram *et al.* (2002). Later,

physical contact was allowed for 10 min, according to the libido test for bulls (Chenoweth, 1981), cited by De Loyola *et al*. (2013).

Body condition was measured in a 1-5 scale, where 1 means gaunt and 5, obese for dairy animals and their crossbreds (Lowman, Scott and Somerville, 1976).

The general statgraphs were calculated, and libido was assessed as an independent variable of body condition; later, the best adjustment by regression model (linear, logarithmic, inverse, quadratic, cubic, logistic and exponential) was used, SPSS (2006), 15.0.1.

RESULTS AND DISCUSSION

Through data descriptive analysis, libido was observed to reach 6.59 points ± 1.751 (typical deviation) and body condition was 2.96 ± 0.598 (typical deviation).

The mean value of libido indicates a position between good and very good (Chenoweth, 1997), but when the teaser performs only one service, it allows it to detect 96 to 100 % females in estrus. In that case, intense libido is required to additionally stimulate the herd´s estrus activity (Roelofs *et al.*, 2007 and Roelofs *et al.*, 2008). However, younger male inability has a critical influence. Mean body condition is advisable to develop teasing activity, within intermediate levels, considered optimum (Vejarano *et al.*, 2005).

To demonstrate the influence of body condition on libido, the linear regression result was chosen, according to the Principle of Parsimony that says that in models with similar results, the simplest one is chosen (Hair *et al.*, 1998).

A significant effect of body condition was observed on libido, with higher libidos the better body conditions (see table).

Vejarano *et al.* (2005) reported values between average and high conditions in bulls from commercial herds, similar to the ones found in this study. Coincidences with the authors were found in that the best scores are produced between the ages of 24 and 48 months old, and that the oldest bulls are more prone to obesity. Furthermore, Landaeta-Hernández, Chenoweth and Berndtson (2001) reported 5-6 points in young beef-producing bulls, considered optimum at that age.

The highest body conditions in animals over 48 months old were the result of decreased growth speed, which allows, from that time on, for more fat accumulation in the tissues, as a result of complete formation of the muscular and skeletal system (Vejarano *et al.*, 2005). Though younger bulls (less than 24 months) are considered in the scale as good (4-6 points), they demand other kinds of handling to increase and preserve sexual libido.

Excess in mating produces sexual fatigue (Holý, 1987), a process associated to inadequate bull use. In herds where estrus activity is more intense at a given moment, the effect may occur, especially in the dominating bull (usually one of the oldest), because it is the one that mates most (López, Orihuela, and Silva, 1999) when high libido is observed.

In some cases estrus activity seems to be decreased, in camagüeyan dairy herds, as reported by De Loyola *et al*. (2012); in other, restriction to accessing the cows for a few hours a day allows for more teaser bull resting time, good enough to keep better body conditions and libido. Although Vejarano *et al.* (2005) found that body condition is best in specimens ranging between 24 and 48 months old (period with the highest sexual activity), and that older bulls are more prone to obesity as a consequence of natural sexual repose, it would be interesting for these researchers to have measured libido at that age, under normal body conditions.

CONCLUSIONS

Libido was significantly increased with body condition, as a result of sexual repose due to estrus activity decrease and restrictions to female contact. Accordingly, it is necessary to determine how libido is affected by different ways of restricting teaser contact with the dairy herd, in the conditions of Camagüey.

ACKNOWLEDGEMENTS

The authors would like to appreciate the collaboration of dairy management and statistics personnel at the Triángulo 1 Cattle Raising Enterprise, who worked on testing and provided herd data.

REFERENCES

BERTRAM, J. D.; FORDYCE, G.; MCGOWAN, M. R.; JAYAWARDHANA, G. A.; FITZPATRICK, L. A.; DOOGAN, V. J. *et al.* (2002). Bull Selection and Use in Northern Australia 3. Serving Capacity Tests. *Animal Reproduction Science, 71*, 51-66.

CHENOWETH, P. J. (1997). Bull Libido/Serving Capacity. *Vet Clin North Am Food Anim Pract, 13* (2), 331-344.

DE LOYOLA, C. J.; BERTOT, J. A.; GUEVARA, R. V.; SOTO, S. A.; GUEVARA, G. E. y RAMÍREZ, J. Á. (2012). Perspectivas de la actividad reproductiva para la producción lechera estacional en rebaños de Camagüey. (Artículo de revisión). *Revista de Producción Animal, 24* (2).

DE LOYOLA, C.; FISS, P.; VÁZQUEZ, R.; RAMÍREZ, J. A. (2013). Influencia de la condición corporal en la libido sexual de receladores vacunos en rebaños lecheros en Camagüey. *Revista de Producción Animal, 25* (Número especial).

DE ARAUJO, J. W.; BORGWARTD, R. E.; SWEEN, M. L.; YELICH, J. V. y PRICE, E. O. (2003). Incidence of Repeat-Breeding Among Angus bulls (*Bos taurus*) Differing in Sexual Performance. *Applied Animal Behaviour Science, 81*, 89-98.

ELLIS, R. W.; RUPP, G. P.; CHENOWETH, P. J.; CUNDIFF, L. V.; LUNSTRA, D. D. y CHASE, C. C. (2005). Fertility of Yearling Beef Bulls During Mating. *Theriogenology, 64*, 657-678.

ENGELKEN, T. J. (2008). The Development of Beef Breeding Bulls. *Theriogenology, 70* (3), 573-575.

HAIR, J. F.; ANDERSON, R. E.; TATHAN, R. E. y BLACK, W. C. (1998). *Análisis multivariante* (5ta ed.): PRENTICE HALL IBERIA, S. R. L.

HOLÝ, L. (1987). *Biología de la reproducción bovina*. La Habana, Cuba: Editorial Científico Técnica.

KERSTING, K.; FLOPKINS, S. y MILLAR, W. (2001). *Bull Soundness Check is Important Part of Management Plan*. Extraído en agosto de 2009, desde http://www.Iowabeefcenter.org/content/newsred/2001/301/3013.htm.

LANDAETA-HERNÁNDEZ, A. J.; CHENOWETH, P. J. y BERNDTSON, W. E. (2001). Assessing Sex-Drive in Young *Bos taurus* Bulls. *Animal Reproduction Science, 66*, 151-160.

LÓPEZ, H.; ORIHUELA, A. y SILVA, E. (1999). Effect of the Presence of a Dominant Bull on Performance of Two Age Group Bulls in Libido Tests. *Applied Animal Behavior Science, 65*, 13-20.

LOWMAN, B. G.; SCOTT, N. y SOMERVILLE, S. (1976). *Condition Scoring of Cattle*. *Rev. Ed*. *Bull, 6*.

MORALES, J. R. (1996). *El celador y el celaje*. La Habana, Cuba: CIMA, MINAG.

ROELOFS, J. B.; SOEDE, N. M.; VOSKAMP-HARKEMA, W.; KEMP, B. y ARTEAGA, A. A. (2008). The Effect of Fenceline Bull Exposure on Expression of Oestrus in Dairy Cows. *Animal Reproduction Science, 108*, 226-235.

ROELOFS, J. B.; SOEDE, N. M.; DIELEMAN, S. J.; VOSKAMP-HARKEMA, W.; KEMP, B. y BARTH, A. D. (2007). The Acute Effect of Bull Presence on Plasma Profiles of Luteinizing Hormone in Postpartum, Anoestrous Dairy Cows. *Theriogenology, 68*, 902-907.

SPSS. (2006). SPSS 15.0 para Windows (version 15.0.1).

VEJARANO, O. A.; SANABRIA, L. y TRUJILLO, L. (2005). Diagnóstico de la capacidad reproductiva de toros en ganaderías de tres municipios del Alto Magdalena. *MVZ-Córdoba, 10* (2), 648-662.

Received: 25-6-2014
Accepted: 3-7-2014

Table. Model summary and estimations of libido parameters regarding teaser body condition

Equation	Model summary					Parameter estimations	
	R^2	F	gl 1	gl 2	Sig.	Constant	b 1
Linear	.240	43.603	1	138	.000	2.338	1.434

Dependent variable: sexual libido
Teaser body condition is the dependent variable