

PONDERAL PERFORMANCE OF BUFFALOES CHEMICALLY CASTRATED, IN BELÉM, PARÁ STATE, BRAZIL

¹COSTA, N. A.; ²MOURA CARVALHO, L. O. D.; ¹LOURENÇO-JÚNIOR, J. B.; ¹TEIXEIRA-NETO, J. F.; ³SANTOS, N. F. A.; ³MONTEIRO, E. M. M.

¹Researches of Embrapa Eastern Amazon - P. Box, 48,
CEP 66.095-100, Belém, Pará. norton@cpatu.embrapa.br;

²Agronomist Travessa Serzedelo Corrêa, Edifício Manoel Pinto da Silva,
Apto. 1104. Belém, Pará State, Brazil. CEP 66.0000.

³Grant holders/CNPq/Embrapa.

ABSTRACT

Were used 20 Murrah-Mediterranean buffaloes, from 18 to 24 months old, begin ten castrated with intratesticular injection of formic aldehyde (40%) and cadmium chloride (0,005g/cc), on the dosage of 1ml/100kg of alive weight for it testicle and ten controls. The animals were kept in *Brachiaria humidicola*, on intensive rotationed grazing, during 226 days. The date was statistically analyzed. The castrated buffaloes showed superior gain of weight (0,702 kg vs. 0,529 kg). The economical evaluation showed that the castrated animals, despite the costs with the chemical substance, have better economical performance.

Key words: Amazon, animal production, economical value, murrah and mediterranean

INTRODUCTION

Castration is a controversial practice in animal management with positive and negative effects on bovine and buffaloes performance. However according to same researches with buffaloes has the advantage of turning the animal tamed, avoids copulation and avoiding fights, besides allowing the production of meat tender and better test with high fat content. Have been utilized several castration methods, which shows several results according to the care given to the animals. Even though, such methods produce high level of stress, occusing weight less (2, 4). This technique is used to facility management, allowing to raise together males and females, besides of make possible better finishing of buffaloes carcass, higher percentage of meat on the posterior part and high value on the product commercialization (2). Recently was developed for bovine a castration technology, with intratesticular injection of chemical substance that reduces animal stress. However, this technique had not yet been test with buffaloes. The chemical castration is easy to be done, don't come bleeding, nor discomfort and risks of secondary infections. The action of these substances, such as the formic aldehyde, causes the destruction of the testicular tissue, and with a located fibroses (3). Thus a research to test the effect of the chemical castration of on the productive performance of steers buffaloes mestizos Murrah – Mediterranean, raised on intensive rotationed grazing system of "*Brachiaria humidicola*", was realized in Belem, Para State, Brazil.

MATERIAL AND METHODS

This work was conducted on the Unity of Animal Research " Dr. Felisberto Camargo", of Embrapa Eastern Amazon, in Belem, Para State, Brazil. The climate is tropical rainy, with more rainy season (january to june) and less rainy (july to december), average annual temperature of 27°C, annual precipitation of 2,761mm, air relative humidity of 86% and 2,389 hours of sun exposure (1). Were utilized 20 buffaloes mestizos Murrah- Mediterranean about 18 to 24 months old, half of which was submitted to chemical castration, while the other half was kept uncastrated. The initial average of weight of the castrated and uncastrated animals were of 203.6 kg and 205.4 kg, respectively. Was used 12 ha of fertilized area if quicuio-da-amazônia (*Brachiaria humidicola*), divided on six plots of 2 ha, managed in intensive rotationed grazing system, with 3 days of occupation and 33 days of resting, with allotment rate of 1.6 A.U/ha.

The animals were castrated with intratesticular injection of formic aldehyde (40%) and cadmium chloride (0,005 g/cc), diluted in sunflower oil, on the dosage of 1ml/100 kg of alive weight, it one of the testicles. Initially was made the cleaning of the testicles, buy washing with bactericidal solution at 1%. Following, the chemical product was injected on the center of each testicle, use automatic pistol, with fine needle, to avoid the reflux the oily solution (Figure 1).

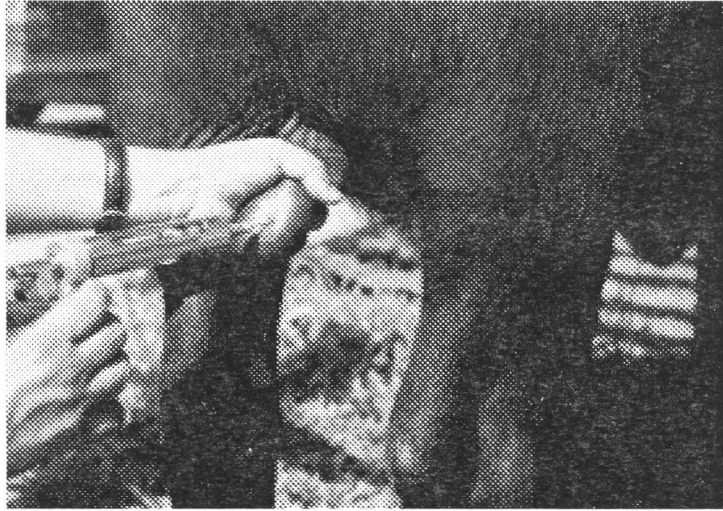


Figure 1. Chemically castration with automatic pistol.

Were collected date of ponderal performance during 226 days (10.08.96 to 05.22.97). The experimental design was completely randomized with three treatments and tem replications. Was made variance analyzes (5). Was realized economical evaluation of the treatments considering the animal gain of eight and chemical substances costs.

RESULTS AND DISCUSSION

Was observed that immediately after castration the testicles became hypertrophied for about ten days, due to testicle edema (Figure 2).

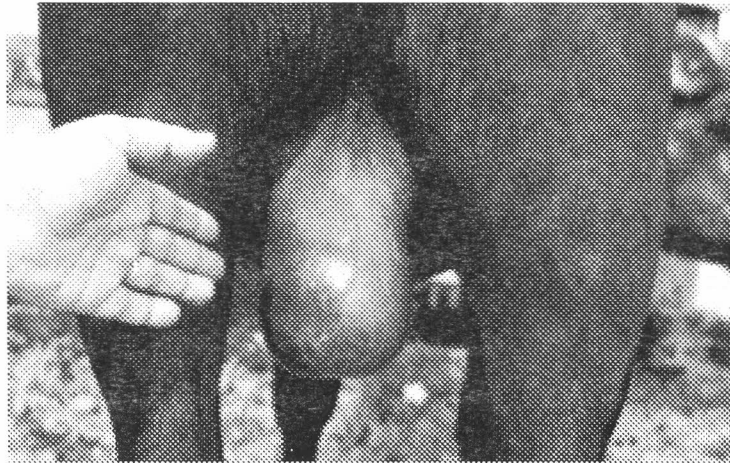


Figure 2. Testicles with increase volume.

This collateral effect can be softened through the application of 1 ml of dehydrate of oxitetracycline (30%) on each testicle. After castration the testicles become fibrous, with form texture when touched, what causes the interruption of seminal fluid production and consequent sterility. The castrated animals seemed tamed not demonstrating interest by the females and neither fights with the bulls. Was avoided the copulation among the animals, common behavior and undesired in a good management and consequent better ponderal performance.

Ponderal Performance

The castrated animals showed better ponderal performance, about 33% (39.1 kg), with daily gain of weight around 0.702 kg in relation to the uncastrated buffaloes, that obtained around 0.529 kg of daily gain of weight (Table 1).

Table 1 - Ponderal performance of experimental animals.

Treatment	Weight gain in day (kg)	Total weight gain (kg)
Castrated	0,702a	158,7a
Uncastrated	0,529b	119,6b

Averages followed by the same small letter vertically, doesn't differs (0,05)

The Figure 3 illustrates the ponderal performance of the studied animals, where we can observe the better performance of the castrated animals.

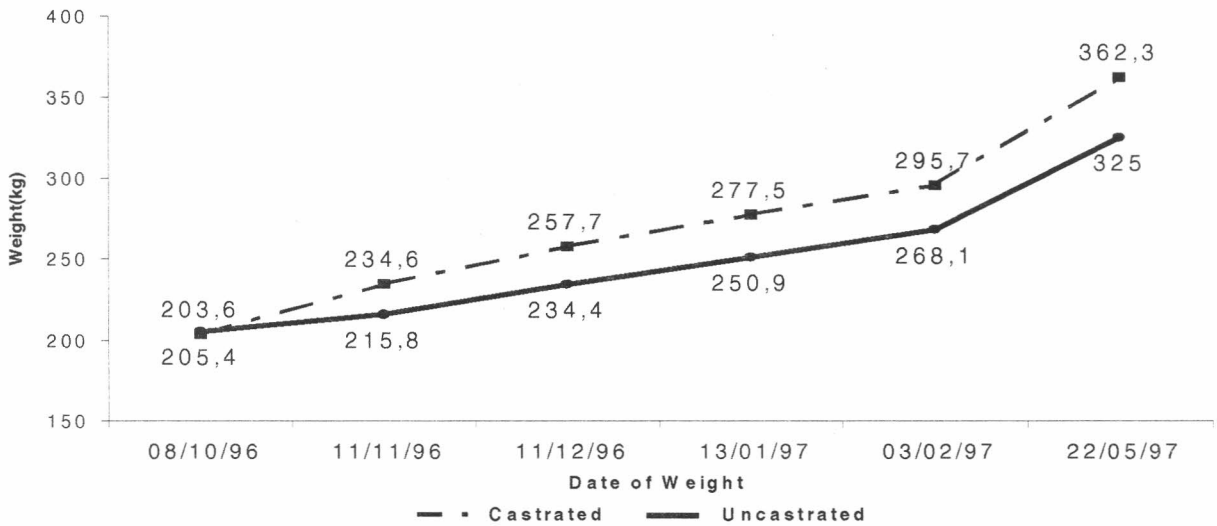


Figure 3. Ponderal performance of castrated and uncastrated animals.

The castration caused an opposite effect to the ones observed on bovine and buffaloes, on which the speed of gain of weight, because of the better feeding conversion, is superior to the uncastrated animals (3). On the other hand, the worse performance of the uncastrated animals, can be caused by the presence of females buffaloes surrounding the experimental area, what may be caused stress, and consequently, reduction of feeding.

Economic evaluation

Table 2, shows the economical evaluation of the experimental treatments, considering the gain of weight/animal and costs with chemical substances. Were utilized 2ml/testicle, being about US\$ 0,19 (US\$ 1.00 = R\$ 2,61), the cost of each ml of the chemical substances used, and then the total expense will be R\$ 0.76/animal castrated. The animals chemically castrated, despite the costs of the chemical substances used, have economical performance 31% superior. However, there is the used of more research to determine the effect of these substances for human health.

Table 2 - Economic evaluation of experimental treatments.

Parameter	Chemical castration (US\$)	Animal control (US\$)
Medium net income	72.96	54.98
Castration costs	0.76	-
Period total income	72.19	54.98
Annual estimated income	116.60	88.81

US\$ 1.00 = R\$ 2,61

REFERENCES

- (1) BASTOS, T.X.; ROCHA, E.J.P.; ROLIM, P.A.M.; DINIZ, T.D.A.S.; SANTOS, E.C.R.; NOBRE, R.A.A.; CUTRIM, E.M.C.; MENDONÇA, L.L.D. (1986). O estado atual dos conhecimentos de clima da Amazônia brasileira com finalidade agrícola. In: SIMPÓSIO DO TRÓPICO ÚMIDO, 1., 1984, Belém, PA. **Anais**. Belém: Embrapa-Cpatu.1: 19-43. (Embrapa-Cpatu. Documentos, 36).
- (2) FAO. (1991). **O Búfalo**. Brasília: Ministério da Agricultura/São Paulo: Associação Brasileira de Criadores de Búfalos. (FAO. Série Produção Animal e Saúde, 4). XIII: 320.
- (3) GUEDES, S. S. (1997). Castração Química. São Paulo, **Revista Pecuária de Corte**, 69: 74-75.
- (4) NASCIMENTO, C.; MOURA CARVALHO, L.O. (1993). **Criação de Búfalos: Alimentação, Manejo, Melhoramento e Instalações**. Empresa Brasileira de Pesquisa Agropecuária, Centro de Pesquisa Agroflorestral da Amazônia Oriental. Brasília: Embrapa-SPI, 403 p.
- (5) PIMENTEL GOMES, F. (1984). **A Estatística Moderna na Pesquisa Agropecuária**. Piracicaba, POTAFOS, 160 p.