DAYS OPEN (DO) IN BRAZILIAN BUFFALOES

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INTRODUCTION

The period between the calving and the first fertile breeding is called the days open and it is one of the most important reproductive characteristics, for it directly interferes same in one of its component, the interval of calving. It also reflects on the reproductive management that the herd is subject to. Reports from India (1), in river breeds (Jafarabadi, Murrah, etc.) showed that the first post-delivery heat occurred after 42 days and in Egypt after 44 days, with a variation of 47 to 120 days. In general, the first heat ocurred 30 days after calving, although most of the time was infertile. There was, however, an improvement in the rate of conception with longer intervals. In São Paulo, on the other hand, the first fertile heat ocurred in buffaloes, in 65.3% of the cases, between 21 and 50 days after calving(2). The days open is an instable characteristic due to a series of environmental causes, among them principally nutrition, breeding management, milking, etc. Several authors have proved this (3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13), thus, besides some of the values being quite extended, there is a great deal of variation, that is, from 77 to 304 days in length. The main causes of referenced variation were the year, order and season of the calving and milk production for nursing.

MATERIAL AND METHODS

A total of 8,055 records of 1,933 female buffaloes were utilized, coming from twelve properties in the states of Pará, Rio G. do Sul and São Paulo. A description of the properties, as well as details on the herds and form of management adopted have been described by several authors (14, 15, 16, 17). Six genetic groups were utilized: Jafarabadi, Mediterrâneo, Murrah, 1/2 Murrah-1/2 Mediterrâneo (1/2 Mu), 3/4 Murrah-Mediterrâneo (3/4 Mu), and 7/8 Murrah - 1/8 Mediterrâneo 7/8 Mu or above. The analyses of the statistical data were done by SAEG (System of Statistical and Genetic Analysis), and of the Least Squares Method through the LSLMMW program - 87 - Least - Squares and Maximum Likelihood Computer Program through Models 1, 2 and 3. The heritability and repeatability coefficients were estimated from variance components.

RESULTS AND DISCUSSION

The average of 5,515 records of days open was of 94.69 ± 84.19 days with a VC = 88.90%. Compared with citations in literature, almost all the values encountered were higher than those of the present study. The values reported for Murrah breed (13) in India, based on the study of other authors, were much lover than those obtained in this paper and than all the estimates found in literature. Some reported values (4, 7, 8, 11) were superior to those of the present study and may be indicators of defficient reproduction management. There is, however, extensive information (6, 9, 10) revealing, that besides management deficiencies, there were long delays in copulation, perhaps to take full advantage of the females capacity for milk

Index terms: Amazon, management, breeding efficiency, reproduction.

production, besides other non-identified causes. The average obtained in this study may be considered satisfactory, taking into consideration the heterogeneity of the data and the well-kown instability of the characteristics, aggravated by the fact of beind provenient from different genetic groups and of several herds in different states of Brazil. Thus, the high the variation coefficient obtained here is also in line with the existing diversities. Uterine involution in female buffaloes varies substantially (1, 2). However, based on the principle that the first fertile heat may occur many times less than fifty days after calving, the obtained value of 94.6 days can be decreased further by adequate management, mainly feeding. Significant effects of genetic group and season of calving were observed on the days open ($P<0.05$). The effect excercised by the year of the calving has been observed in various studies (3, 8, 9). Regarding the influence of calving season, the lowest variations were found when calvings occurred from Mar-May (97.38 ± 3.02 days) and the highest for those occurring from Sept-Nov (179.08 ± 7.00 days). Some authors also found the influence of the season on the characteristicic (3, 4, 6). The estimated value of the buffaloes interclass correlation or repeatability from a total of 1.461 service periods, in 378 females, adjusted for significant effects ($P<0.01$) of the herd, females within the herd and season of calving ($P<0.05$) was 0.115 ± 0.026. The heritability or interclass correlation of paternal halfsisters for 1.463 service periods, from 24 breeders (K=44.05 obs.) adjusted for significant effects ($P<0.01$) of genetic group, order, year and season of calving was 0.039 ± 0.033). The only data obtained in the literature consulted as to the heritability of this characteristic in buffaloes was in Egypt (10), being superior or the estimate of this study, that is: 0.11 ± 0.09. The estimated value is quite low, indicating, as expected, to be a variable highly subject to modifications through good management. Reduction of the service period is fundamental for the reproductive efficiency of the herds, because the interval between calvings depends upon this. The management of pregnant cows in the last months of pregnancy and especially after calving, shoud be observed. It may be concluded from these results that the extension of do in this species demonstrated that the females present a uterine recovery satisfactory in Humid Tropics conditions and, despite the fact of the buffaloes herds are managed generally under adverse conditions, they present excellent rates of reproductive efficiency, regardless of genetic group, which favors the raising of these animals in different production systems.

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