

Some Statistical and Physiological Data of the Newborn Swamp Buffalo Calves.

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Introduction

These data were mainly collected at Surin Livestock Breeding Station of the Department of Livestock Development. Between the 26. of July and the 15. of October 1979, 65 calves were born according of the seasonal breeding, i.e. a bull joins the flock of about 20 cows for three months day and night.

Material and Methods

The bodyweight of the dam and the calf are taken in kilogramm, the body measurement of the calf in centimeter and the body temperature of the calf in degree Celsius by rectal measurement with a clinical thermometer. All data are obtained at least 12 hours after parturition.

Results

1. Distribution of sex and incident of calving time.

From 65 records of parturition 40 male calves (61.5%) and 25 female calves (38.5%) are born that means a sex ratio male to female of 1.6:1. From 40 male calves 24 are born at daytime (60%) and 16 at night (40%) whereas from 25 female calves 11 are born at day (44%) and 14 at night (56%). Combined the number of calves 35 are born at day (53.8%) and 30 are born at night (46.2%). The diurnal incident of parturition has to be understood between 6 a.m. and 6 p.m.

2. Bodyweight of the calves

The average of the male calves is 27.64 ± 6.62 kg with a range of 18 - 39 kg ($n=38$) and the average of the female calves is 27.0 ± 5.11 kg with a range of 18 - 38 kg.

3. Bodyweight of the dam

The average for the dams is 422.3 ± 41.76 kg with a range of 332 – 508 kg. The percentage of the bodyweight of the calf to the bodyweight of the dam ranges of 4.15–10.2% in male calves and of 4.26–9.18% in female calves. The average for males is 6.88% and for females 6.5%.

Following Pearson's correlation coefficient r in 49 cases is 0.184 that means there is no correlation between the bodyweight of the dam and the bodyweight of the calf.

4. Bodymeasurement of the calves.

At first the definitions :

Heart Girth means the circumference just above the withers

Length means the distance between the anterior rim of the shoulder joint and the tuber ischium

Height means the distance between the outer lower rim of the claw and the withers.

The following data are obtained for *male* calves :

heart girth : 72.63 ± 4.27 cm with a range of 60–82 cm

length : 59.08 ± 4.59 cm with a range of 54–71 cm

height : 69.5 ± 4.32 cm with a range of 61–81 cm

The data for *female* calves :

heart girth : 71.16 ± 4.85 cm with a range of 60–79 cm

length : 59.64 ± 5.00 cm with a range of 51–70 cm

height : 68.44 ± 4.00 cm with a range of 60–74 cm

5. Bodytemperature of the calf.

It is found out that the average value is $38.46^{\circ}\text{C} \pm 0.08^{\circ}\text{C}$ (101.28°F) with a range of 37.9°C (100.22°F) to 39.0°C (102.2°F). The bodytemperature can rise physiologically after sun bathing and after a long walk from the pasture to the box where they are kept at night. In these cases it is obtained an average value of 40.1°C (104.01°F) up to the maximum ever reached of 41.7°C (107.06°F). This happened twice when the newborn calf had to walk in the afternoon about one mile back to the box. Fourteen hours later these two male calves were measured again and the values reached only 38.4°C and 38.6°C respectively.

6. Eruption of the teeth.

The observations are merely made on the incisors because of the impossibility to control the molars in simple manipulation.

I_1 : the eruption occurs 0–8 days after parturition whereby 87.5% at day of birth and only 12.5% erupt to the eighth day.

I_2 : the eruption occurs with a range of 5–21 days after parturition.

I_3 : the eruption occurs with a range of 11–39 days.

I_4 : the eruption occurs 47–108 days after parturition. It is grown high $\frac{1}{4}$ within 71–104 days and grown high $\frac{3}{4}$ between 87–116 days.

I_2 and I_3 are in an overlapping position within 48–116 days which means the oldest and the youngest calf observed so far.

Discussion

The sex ratio of 1.6 : 1 male to female calves is certainly extraordinary. Fischer (1965) reports a secondary sex ratio of 101.90 : 100 from 97000 parturitions in the Malaysian swamp buffalo. It might be noticeable that more male calves (60%) are born at day and more female calves are born at night (56%). After all there is a diurnal trend of parturition (53.8%) Usanagornkul (1979) reports a nocturnal trend in parturition in swamp buffalo and found it to be highly significant from the diurnal one.

The average bodytemperature seems to be very low in comparison to cattle calves with an average of 39.5°C. Possibly due to the fact that more calves were measured in the early morning because of the management conditions these data are obtained. Only in adult buffalo references could be found : Villegas (1969) reports 38.49°C in female and 39.9°C in male buffalo and Voigt (1977) mentions 38.2°C

There is only a slight difference of 0.64 kg between the average bodyweight of both sexes whereas the minimum value of 18 kg is equal and the maximum value differs from 1 kg in female and 39 kg in male calves respectively. Singh, B.B. (1974) found out that the mortality in relation to the birthweight coincides. The average weight of dead calves in the first month of life was 27.0 kg which is exactly the value mentioned above as average bodyweight for 25 female calves. Further on a significant increase in life span due to an increase of birthweight was found by the same author. Chantalakhana (1979) mentions

the birthweight in swamp buffalo to be low with 26–28 kg and to be high with 30–47 kg and compares it to Murrah calves with an average birthweight of 35 kg in male and 30 kg in female calves respectively.

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