

Production and Reproduction Performances of Different Breeds of Buffaloes in Kathmandu

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1. INTRODUCTION

Milk production is the most economic character of dairy animal. Milk production vary widely between different breeds of animals. It is governed by average daily yield and lactation length of an animal. The life time production depends upon the age at first calving and time interval between two consecutive calvings besides average daily yield. It is, therefore, very important that dairy animals should have lower age at first calving, regular and short calving interval. The success in dairy farming, as in other business, requires proper care and management of the production unit. Besides these there are other factors such as biological, climatological, physiological, etc., which effect efficient milk production. In this paper, an attempt has been made to present only those factors which have direct bearing on buffalo milk production of different breeds maintained in the selected village panchayat.

The objective of the present paper is to study the milk production and reproduction performances of different breeds of buffalo on unorganised farms in Bhaktapur district of the Kathmandu valley.

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2. MATERIALS AND METHODS

Keeping in view the above objective, one village panchayat in Bhaktapur district of Kathmandu valley, Nepal namely Jhaukhel was selected purposively. A list of buffalo milk producers in the village Jhaukhel was prepared with the help of Pradhan Panch and Junior Technical Assistant (Livestock). All the producers were grouped into three different size groups depending upon the number of milch buffaloes. The three size groups of buffalo stall classified for the study purpose were as follows :

1. 1 milch buffalo stall
2. 2-3 milch buffaloes stall
3. 4 and above buffaloes stall.

The information regarding milk production performance of different breeds of buffaloes were obtained only for those buffaloes which were maintained on the selected stalls and thus altogether 9 murreh buffaloes, 13 cross-bred buffaloes and 7 local buffaloes were selected for the study.

The producers were personally interviewed and the data regarding age at first calving, lactation yield, lactation length, dry period and calving period, etc., of different breeds of buffaloes were recorded with the help of pre-prepared schedule. The year of study was 1975-76.

3. FINDINGS AND DISCUSSION

3.1 Composition of different breeds of Buffaloes

The estimates of percentage of different breeds of buffaloes maintained by the farmers in the selected village panchayat have been presented in table 1.

Table 1 indicates that on an average cross breeds were the most popular breed, accounting for as high as 58.33 percent of the total number of buffaloes maintained on the selected stalls. Murreh breed was the next in order which on an average accounted for 29.77 percent of total number of buffaloes in the selected samples. Local breeds on an average accounted for merely 11.90 percent of the total number of buffaloes in the samples. On the stalls of different sizes also cross breeds were the most important breed accounting for maximum share in the number of buffaloes maintained. Its maximum share was however, observed on 2-3 buffalo-stalls

Table 1

Composition of Different Breeds of Buffaloes in the sample house holds according to size of the stall at Jhaukel

| Size of the stall | Number of samples | Breeds of Buffaloes | | |
|-------------------|-------------------|---------------------|---------------|---------------|
| | | Murrah | Cross bred | Local |
| 1 Buffalo | 19 | 4 (21.05) | 9 (47.37) | 6 (31.58) |
| 2-3 Buffaloes | 16 | 10 (26.31) | 24 (63.16) | 4 (10.53) |
| 4 and above | 5 | 11 (40.74) | 16 (59.26) | - |
| Total | 40 | 25 (29.77) | 49 (58.33) | 10 (11.90) |

(Figures in Parentheses indicate the Percentage of the total strength of different breeds of Buffaloes)

(63.16%) closely followed by 4-and above stalls (59.26%) and its share was lowest on one-buffalo-stall (47.37%). Comparatively more popularity of this breed on all the sizes of stalls in the panchayat was due to policy of His Majesty's Government which provided Murrah bulls for cross breeding purposes at subsidised rates.

Murrah was the next important breed covering nearly 30 percent of the total number of buffaloes maintained. In different-size groups its share was maximum on 4 and above buffalo stall followed by 2-3 buffalo stall and one buffalo stall accounting for 40.74, 26.31 and 21.05 percent of total number of buffaloes maintained on these different size groups respectively.

Local breed considered to be poor man's buffalo was conspicuously absent from 4 and above size group. Its maximum share was observed on the smallest size group, that is one buffalo stall accounting for nearly third one (31.58%) of total number of buffaloes maintained on this size group.

3.2 Age at first Calving

Table 2 indicates that the average age at first calving in Murrah breed was 43.44 months as compared to 48.53 and 60.15 months for cross breeds and local breed respectively. Thus average age at first calving in Murrah breed was nearly 5 and 16.50 months shorter as compared to cross breeds and local breed respectively. Likewise on an average cross bred buffaloes calved about 12 months earlier as compared to local breed.

It is thus evident that the local and cross breeds buffaloes calve late in life as compared to Murrah breed and consequently may have comparatively lower productive life. Comparatively lower age at first calving in Murrah buffaloes may be chiefly on account of hereditary differences among breeds and the same may be true with cross bred buffaloes as compared to local ones.

3.3 Lactation Length

The average lactation length in Murrah breed was observed to be 301.66 days as compared to 322.30 days for cross-breeds and 342 days for local breed showing that on an average its lactation length is shorter by 21 and 41 days than that of cross-breeds and local breed respectively (table 2). Similarly on an average cross-breeds lactation length was nearly 20 days shorter as compared to that of local breed. Variation in lactation length among different breeds might be mainly due to differences in genetic make-up besides environmental factors.

Table 2

**Production and Reproduction Performances of Different Breeds of
Buffaloes at Jhaukhel**

| Milk production performance | Murrah | | | Cross bred | | | Local | | |
|------------------------------------|---------------------|--------|-----------------|---------------|---------|-----------------|---------|--------|-----------------|
| | Range | Mean | S. E. (Mean) | Range | Mean | S. E. (Mean) | Range | Mean | S. E. (Mean) |
| Age at first calving (months) | 39-49 | 43.44 | 1.52 | 44-55 | 48.53 | 1.50 | 55-65 | 60.15 | 1.83 |
| Lactation length (days) | 285-315 | 301.66 | 5.33 | 300-345 | 322.30 | 7.48 | 315-360 | 342 | 9.33 |
| Lactation yield (litres) | 1567.50- 2137.50 | 1855 | 95.83 | 1150- 1950 | 1481.53 | 156.33 | 540-945 | 728.57 | 68.44 |
| Average yield daily (litres) | 5.5-7.5 | 6.27 | 0.33 | 3.5-6.5 | 4.69 | 0.56 | 1.5-3 | 2.14 | 0.28 |
| Dry period (days) | 150-195 | 170 | 7.72 | 210-255 | 231.92 | 7.92 | 360-406 | 353.57 | 17.85 |
| Calving period (days) | 435-510 | 468.12 | 13.69 | 510-600 | 551.15 | 16.16 | 645-765 | 692.14 | 24.33 |

3.4 Lactation yield

It would be seen from table 2 that the average lactation yield of Murrah buffaloes was observed to be 1855 litres as compared to 1481.53 and 728.57 litres for cross breeds and local breed respectively. Thus Murrah buffaloes produced on an average nearly one and a quarter times and two and a half times more milk as compared to cross breeds and local breed respectively. It is also apparent that milk produced by cross bred in a lactation was more than two times larger than the local breed.

The above results indicate that in respect of milk yield, Murrah breed was comparatively superior to cross breeds and local breed. Local breed was observed to be the poorest yielder.

3.5 Average daily yield

It may be observed from table 2 that the average daily yield in murrah breed was observed to be 6.27 litres as compared to 4.69 and 2.14 litres in cross breeds and local breed respectively indicating that Murrah buffaloes on an average produced one and a half and 3 times more milk as compared to cross-breeds and local breed respectively. The lower and upper limit of the range of production in murrah breed (5.5 litres to 7.5 litres) was also higher than that in cross breeds (3.5 litres to 6.5 litres) and local breed (1.5 litres to 3 litres). Though lactation length in local and cross breeds was observed to be higher than in murrah breed, however, higher daily average yield of murrah breed compensated the shorter lactation length. Similarly higher per day average yield in cross breeds gave more yield in a lactation than local breed.

3.6 Dry period

The average dry period in murrah breed was observed to be as 170 days, whereas in the cross breeds and local breed it was 231.92 and 353.57 days respectively. These results reveal that unproductive period in murrah breed was comparatively shorter than cross-breeds (by 61.92 days) and local breed (by 183.57 days). Likewise, the unproductive period in cross-breeds was comparatively shorter than local breed. These variations in dry period were possibly due to variations in breeding efficiency among different breeds of buffaloes.

3.7 Calving period

Table 2 also indicates that the average calving period in Murrah breed was 468.12 days which was about 83 and 244 days shorter than that of cross breeds (551.15 days) and local breed (692.14 days) respectively. Similarly, the average calving period in cross-breeds was about

141 days shorter than that of local breed. The range of calving period was also observed likewise

4. Summary

On an average cross bred was the most important breed accounting for as high as 58.33 percent followed by Murrah breed which shared 29.77 percent of the total number of buffaloes maintained on the selected stalls of the panchayat. Local breed was only 11.90 percent in the selected sample. On the stalls of different sizes also cross bred was the most important breed though its maximum share was observed on 2-3 buffalo stall (63.16%) closely followed by 4 and above stall (52.62%) and its share was smallest on one buffalo stall (47.37%). Comparatively more popularity of this breed on all sizes of stalls in the panchayat was due to the policy of His Majesty's government. Murrah breed was maximum in number on 4 and above buffalo stall (40.74%) followed by 2-3 buffalo stall (26.31%) and lowest on one buffalo stall (21.05%). The maximum share of local breed was observed on the smallest size group, that is, one buffalo stall accounting for nearly one third (31.58%) followed by 2-3 buffalo stall (10.53%). On the stalls having 4 and more buffaloes, not a single local breed was maintained.

Among different breeds of buffaloes murrah on an average was observed to possess lowest age at first calving, highest yield in a lactation, shortest dry period and shortest calving period followed by cross bred and local breed. Murrah breed as compared to cross bred and local breed, and cross bred as compared to local breed were observed to possess comparatively shorter lactation length but that was more than compensated by comparatively higher daily yield as well as shorter calving period. On the whole, murrah breed was observed to be best dairy animal. Cross bred was next in order- Local breed of non-descriptive nature was the poorest dairy animal, generally maintained by poor farmers.