

## Short Communication

# Comparison of Income from Nili-ravi Buffalo and Sahiwal Cattle Herds of Livestock Experiment Station, Bahadurnagar (Okara, Pakistan)

MAQSOOD AHMAD

Livestock Production Research Institute, Bahadurnagar, Okara-Pakistan

Correspondence e-mail: ksanwnda@fsd.paknet.com.pk

## ABSTRACT

Data on 226 Buffaloes and 516 Sahiwal cattle maintained at Livestock Experiment Station Bahadurnagar Okara Pakistan, during 1981 to 1999 were used in the present study. On an average a Nili-Ravi buffalo and Sahiwal cow produced 8012.26 and 4713.18 L of milk, respectively during their lifetime. The total income generated by Buffalo and Sahiwal cow herd was Rs. 27.42 and Rs 35.56 millions, respectively during 1983 to 1999. The herd size of buffalo was smaller than Sahiwal cattle; even then buffalo seems to be advantageous compared to Sahiwal cow in respect of lifetime milk production, while mortality was less in Sahiwal cattle.

**Key Words:** Buffalo; Cattle; Cow; Nili-ravi; Pakistan

## INTRODUCTION

Pakistan has 23.2 million buffalo and 22.5 million cattle population for milk production to meet the increasing demand for milk consumption by its large population. Seventy per cent rural population directly or indirectly is employed at varying scale with dairy production. The profitability in dairying depends upon efficiency of feed conversion into milk, age of maturity, milk production. Lactation length, calving interval, productive and herd life of the animals. A question was always raised by the farmers about the overall milk production and profitability in cattle and buffalo. To answer the question a study was planned to observe the income of buffalo and Sahiwal cattle herds maintained at Livestock Experiment Station Bahadurnagar, Okara-Pakistan.

## MATERIALS AND METHODS

The data on 226 buffaloes and 516 Sahiwal cows were collected from 1981 to 1998 on milk production, feeding, mortality and income from the record of the farm. The longevity (total life), productive life (1<sup>st</sup> calving to last date of dry) herd life (1<sup>st</sup> calving to disposal date), milk per day of productive life and per day of herd life were worked out (Table I). The income from both herd accruing from the sale of milk, animals issued for breeding, auction of animals and disposal of skins was taken separately to compare the performance of buffalo and cow.

**Table I. Productive Performance of Nili Ravi Buffalo and Sahiwal Cow Herds at Les Bahadurnagar**

| Traits   | BUFFALO |                | SAHIWAL |                |
|--|---------|----------------|---------|----------------|
|  | No.     | Mean SE        | No.     | Mean SE        |
| Total Milk yield (litres)                      | 226     | 8012.26±236.29 | 516     | 4713.18±204.21 |
| Longevity (days)                               | 226     | 3759.00±77.35  | 516     | 2888.89±34.15  |
| Productive life (days)                         | 226     | 1967.32±62.06  | 516     | 1374.57±24.53  |
| Herd life (days)                               | 226     | 2228.00±70.65  | 516     | 1548.00±32.91  |
| Milk yield per day of productive life (litres) | 226     | 4.07±0.21      | 516     | 3.42±0.15      |
| Milk yield per day of herd life (litres)       | 226     | 3.59±0.18      | 516     | 3.04±0.13      |
| Age at First calving (days)                    | 237     | 1531.65±14.42  | 523     | 1340.48±16.23  |

## RESULTS AND DISCUSSION

On an average a buffalo produced 8012.26 L of milk, where as a Sahiwal cow produced 4713.18 L of milk during their life time. The longevity in buffalo was averaged 3759 days while in Sahiwal cow it was 2888.99 days. The average productive life was 1967.32 days for buffaloes and 1374.57 days for Sahiwal cows. The milk production of buffalo and Sahiwal is less as reported by Tunikov (1983) in Redd Steppe cow that produced 19010 kg milk in productive life. Higher performance of exotic breed is due to their better genetic potential. Similarly, the average herd life was 2228 days in buffalo and 1548 days in Sahiwal. Nikolaichev (1983) reported that average age at first calving was 763 days which were significantly lower than Sahiwal and buffalo. However, better management increased the production life of the cow in India. Buffaloes matured late compared to Sahiwal cows but later remained productive longer, but its production was also significantly less than exotic cow. Ali (1989) reported life time production 7834

kg milk during 3465 days in productive life in Nili Ravi buffalo.

The average milk yield per day of productive life was 4.07 L per buffalo and 3.42 L per Sahiwal cow. Similarly, the average milk production per day of herd life was 3.59 and 3.04 L in buffalo and Sahiwal cow, respectively. The age at first calving was 1531.65 days in buffalo and 1340.48 days in Sahiwal cattle. It reflects the onset of early maturity in Sahiwal cattle which is due to physiology and species differences. Age at first calving in Sahiwal cow is significantly higher than reported by Nikolaichev (1983).

**Feeding efficiency.** During the period 1981 to 1998, on an average buffalo consumed 8.58 kg green fodder, 0.36 kg concentrate and 0.16 kg dry fodder per litre of milk produced. Sahiwal cow consumed 8.38 kg green fodder, 0.37 kg concentrate and 0.13 kg dry fodder per litre of milk. Difference in feeding efficiency was non significant between the two species (Table II).

**Table II. Concentrate and fodder consumed per litre of milk**

|         | Concentrate | Green fodder | Dry fodder |
|---------|-------------|--------------|------------|
| Buffalo | 0.36 Kg     | 8.58 Kg      | 0.16 Kg    |
| Sahiwal | 0.37 kg     | 8.38 kg      | 0.13 kg    |

**Milk production.** During the study period, Nili-Ravi buffalo and Sahiwal cow herds produced 4730 and 6618 tons of milk, respectively. In terms of milk production, the buffaloes were more efficient compared to Sahiwal cows. Nili-Ravi is more productive than Murrah Buffalo of India having 1515.69 days productive life as reported by El-Arian and Tripethi (1989). The difference between two species was significant. Buffalo remained productive for 1967.32 days in life against the Sahiwal cow that remained 1374.57 days. Therefore, the buffalo is considered to be more productive and efficient in milk production as well.

**Table III. Income in rupees**

| Year  | Milk     |          | Breeding |         | Culled  |         | Skins |       |
|-------|----------|----------|----------|---------|---------|---------|-------|-------|
|       | Cows     | Buff.    | Cows     | Buff.   | Cows    | Buff.   | Cows  | Buff. |
| 1983  | 313620   | 190325   | 70101    | 67563   | 78822   | 11323   | 100   | 381   |
| 1984  | 722902   | 447728   | 87488    | 101225  | 229573  | 146421  | 561   | 907   |
| 1985  | 935521   | 799714   | 48749    | 27961   | 191028  | 193360  | 510   | 788   |
| 1986  | 1020122  | 737044   | 82827    | 65538   | 325476  | 305225  | 490   | 1326  |
| 1987  | 1051132  | 711999   | 75480    | 75348   | 313735  | 195235  | 1125  | 3263  |
| 1988  | 1166514  | 606117   | 132277   | 120839  | 400410  | 205153  | 2055  | 3380  |
| 1989  | 1261490  | 707506   | 51134    | 60620   | 297123  | 151965  | 3100  | 1957  |
| 1990  | 1518244  | 666290   | 565781   | 54242   | 752202  | 180155  | 2565  | 6440  |
| 1991  | 1714453  | 8040847  | 668180   | 402258  | 383855  | 28635   | 1580  | 4496  |
| 1992  | 1626293  | 691243   | 118638   | 257834  | 429704  | 238812  | 6683  | 1409  |
| 1993  | 1613285  | 881683   | 685129   | 189434  | 571992  | 296884  | 3002  | 4241  |
| 1994  | 1568607  | 1017175  | 154422   | 589555  | 570476  | 323971  | 5014  | 4166  |
| 1995  | 1933606  | 905764   | 485290   | 416294  | 1256054 | 173618  | 5621  | 9046  |
| 1996  | 2111982  | 917349   | 206971   | 144790  | 685205  | 257332  | 5139  | 7509  |
| 1997  | 2195040  | 1103429  | 289265   | 164983  | 472153  | 145242  | 4333  | 10038 |
| 1998  | 2569948  | 1132869  | 186880   | 53851   | 215219  | 617375  | 4031  | 5459  |
| 1999  | 232797   | 1110733  | 220315   | 137731  | 669330  | 283265  | 7783  | 3797  |
| Total | 23555556 | 20667815 | 4128927  | 2930066 | 7842357 | 3753971 | 53692 | 68603 |

Total income from Sahiwal herd Rs. 35.56 Millions. Total income from Buffalo herd Rs. 27.42 Millions

**Income.** The income was taken from the sale of milk, animal issued for breeding, culled animals and disposal of skins. Income from cow herd during the study period was Rs 35.56 millions. Out of this, Rs. 23.55 millions incurred from sale of milk, Rs. 4.12 millions from sale of breeding animals, Rs. 7.84 millions from culled and auctioned animals and Rs. 0.053 million from the disposal of skins. Total income from buffalo herd during the same period was Rs. 27.42 millions. Out of this income, Rs. 20.67 millions was incurred from sale of milk, Rs. 2.93 millions from breeding animals, Rs. 3.75 millions from culled animals and Rs. 0.068 millions from skins. Buffaloes were culled at a higher rate due to brucellosis problem in the herd during the past years (Table III). As the Buffalo is efficient for milk production, so in turn buffalo herd was efficient for income generation.

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