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Short Communication

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

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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 (1st calving to last date of dry) herd life (1st 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.

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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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