

STUDY OF SOME MILK PRODUCTION TRAITS OF *Nili-Ravi* BUFFALO IN PAKISTAN**Abdul Waheed^{1,*}, Asim Faraz¹, Nasir Ali Tauqir² and Hafiz Muhammad Ishaq¹**

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ABSTRACT

Nili-Ravi buffalo (*Bubalus bubalis*) is famous for milk production in Pakistan. This study focused on several milk production traits in this breed. Performance records (n=2599) of *Nili-Ravi* buffalo in different parities kept under bull mother scheme run by LPRI, Bahadurnagar district Okara, Punjab, Pakistan were subjected to statistical descriptive analysis. Lactation period, total milk yield and 305-day milk yield averaged 384.40±73.16 days, 3148.1±717.69 kg and 2736.7±487.56 kg in first parity, 379.39±77.35, 3195.3±748.86, 2799.9±474.15 in second parity, 374.1±73.36, 3193.6±695.34, and 2816.5±510.23 in third parity, 360.9±78.30, 3140.9±655.91 and 2796.6±474.15 in fourth parity, 374.4±76.07, 3136.1±599.31 and 2820.1±428.18 in fifth parity, 357.5±86.19 days, 3101.9±770.61 kg and 2754.3±497.73 kg in sixth parity, respectively. It was worth mentioning that total milk yield increased after first lactation and reached the highest in 2nd parity. Further, a gradual decrease was observed in this trait. The 305-day milk yield increased up to 3rd parity and then declined afterwards. Lactation periods were longer in earlier parities as compared to later ones. It is therefore, suggested that contemporary selection program for

the best performing buffaloes should be launched to improve the breed to exploit its highest potential. Voluntary selection is the dire need of the hour in order to exploit the milk production potential of *Nili-Ravi* breed to its maximum.

Keywords: *Bubalus bubalis*, *Nili-Ravi* buffaloes, milk traits, lactation performance, days in milk

INTRODUCTION

Among buffalo breeds *Nili-Ravi* presents a special stance presenting a major milk contributor in Pakistan, where the species population surpassing 47.7 million heads in the country (GOP, 2024-25). Liking buffalo milk is another advantageous factor for the species and considered a major responsible element for its promotion. This invaluable breed has received great potential for milk production surpassing sometimes even 50 kilograms in 36 hours as recorded in milk competition events in the country. Resuming such marvelous production potential, the breed could be exploited for rise in national production to suffice the needs of ever-growing human population at a brisk rate.

Several milk production traits need special

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emphasis like total yield of milk in a lactation; number of days animals remain in milk and standard milk yield (305-days) as these traits are of great economic concern. Every increased unit (liter) of milk production would provide not only enhanced income but also the reduced cost of production and increase in efficiency of the production system and vice versa. Similarly longer periods of lactation beyond certain limits where production falls to a very low level are not desirable. Although they are adding to productive life of the animal yet overall performance of animals drops down in terms of production and reproduction and a failure of animal management due to longer calving intervals and increased management costs. Therefore, overall administrative control cannot be achieved until and unless optimum level of yield is maintained for traits. In selection programs, standard data is needed for comparison purposes to enhance the influence of selection and achieve maximum response. Hence, standard milk production (305-day) could not be ignored. The present study aimed to describe some milk related traits of *Nili-Ravi* buffaloes maintained in government run farms.

MATERIALS AND METHODS

Milk production performance records (n=2605) about *Nili-Ravi* buffaloes belonging various parities were collected from government farm (Government Livestock Experiment Station, Chak Katora, district Bahawalpur in Punjab, Pakistan). The buffalo records belonged to various parties and hence trimmed after 7th parity as lesser number of records were present in higher parities. The traits under study were total milk yield per lactation (LMY), length of lactation (LL) and the 305-day milk yield. After editing

the data for necessary checks of consistency, they were subjected to descriptive analysis by Statistix software.

RESULTS AND DISCUSSIONS

The values of lactation milk yield, length of lactation and the 305-day milk yield (MY-305) of *Nili-Ravi* buffaloes show (Table 1) that in first parity buffaloes these traits averaged 3148.1±717.7 kg, 384.4±73.2 days and 2736.7±487.6 kg, respectively. The fluctuation in average LMY was haphazard yet highest LMY was noted in 7th lactation that declines gradually afterwards (Table 3). Similarly, highest and lowest average 305-day milk yield was observed in 5th and 11th parities, respectively (Table 1). Corresponding longest and shortest lactation periods were found during 11th and 6th parity buffaloes (Table 2). The phenotypic presentations and changes in LMY and MY-305 during various lactations are drawn in Figure 1 and 2, respectively. Relevant studies found in literature have depicted similar findings in cattle and buffaloes but the results about LMY, MY-305 and LP yielded in present study remarked the highest as compared to some previous studies in *Nili-Ravi* (Chaudhry, 1992; Afzal 2007), Murrah (Yadav *et al.*, 2013) and Egyptian buffaloes (Fooda *et al.*, 2010; Soliman and Bassiony, 2011; Ibrahim, 2012; Soliman, 2013) and Aspilcueta-Borquis (2010) in buffaloes. Our *Nili-Ravi* buffalo is the best in performance yielding higher milk in each of the lactations as compared to any other buffalo breed of the world and even *Nili-Ravi* breed of India. Further, intentional selection by farmer for higher milk yield over decades has also improved our *Nili Ravi* buffalo in Pakistan.

Table 1. Descriptive statistics for 305-day milk yield in *Nili-Ravi* buffaloes.

Lactation No.	N	Mean	SD	C.V.
1	351	2736.7	487.56	17.82
2	421	2799.9	580.44	20.73
3	590	2816.7	510.23	18.11
4	545	2796.6	474.15	16.96
5	317	2820.1	428.18	15.18
6	197	2754.3	497.73	18.07
7	3	2761.2	419.28	15.19
8	40	2675.1	497.55	18.59
9	19	2620.2	414.09	15.80
10	10	2357.7	535.03	22.69
11	11	2216.9	386.41	17.43

Table 2. Descriptive statistics for lactation period in *Nili-Ravi* buffaloes.

Lactation No.	N	Mean	SD	C.V.
1	351	384.40	73.16	19.03
2	421	379.39	77.35	20.39
3	590	374.10	73.36	19.61
4	545	367.45	78.30	21.31
5	317	374.42	76.07	20.32
6	197	357.48	86.91	24.31
7	93	372.41	78.36	21.04
8	40	369.43	79.78	21.59
9	19	380.26	86.80	22.83
10	10	386.40	134.61	34.84
11	11	387.45	54.74	14.13

Table 3. Descriptive statistics for lactation milk yield in *Nili-Ravi* buffaloes.

Lactation No.	N	Mean	SD	C.V.
1	351	3148.1	717.69	22.79
2	421	3195.3	748.86	23.44
3	590	3193.6	695.34	21.77
4	545	3140.9	655.91	20.88
5	317	3202.3	599.31	18.72
6	197	3101.9	770.61	24.84
7	93	3449.1	347.60	19.78
8	40	2957.4	679.28	22.97
9	19	2954.5	577.83	19.56
10	10	2815.0	861.25	30.59
11	11	2505.8	692.31	27.63

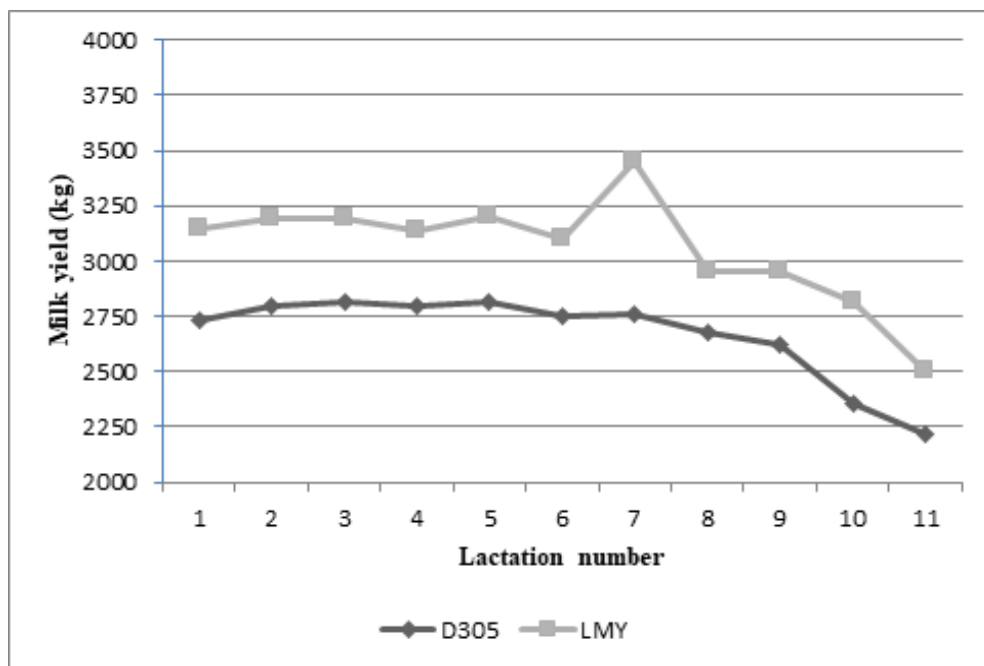


Figure 1. Lactation milk yield and 305-day milk yield in *Nili Ravi* buffaloes in eleven parities.

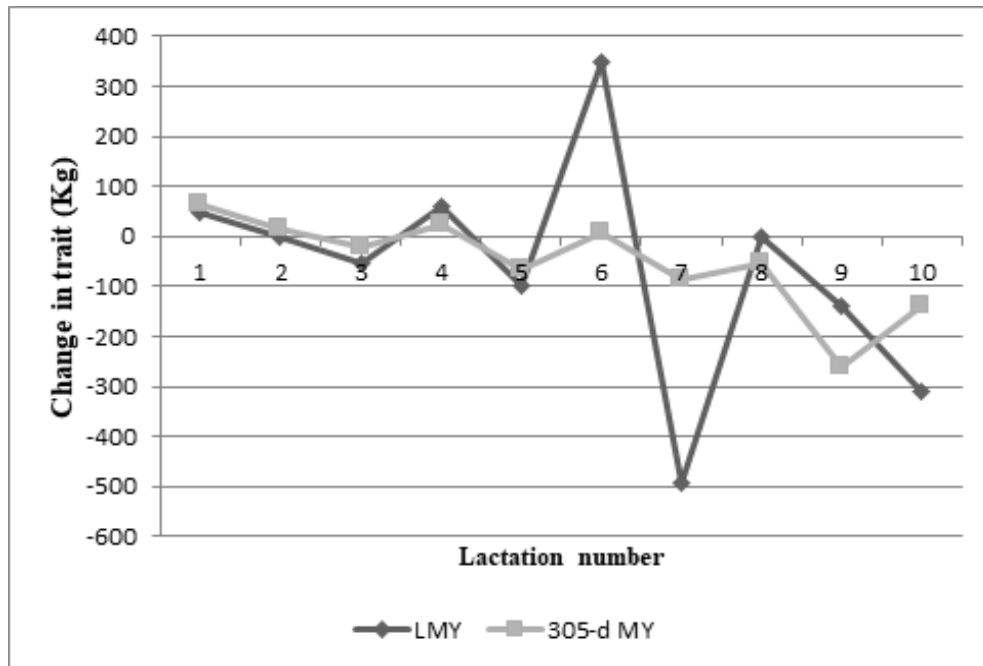


Figure 2. Fluctuations in LMY and 305-day milk yield in *Nili Ravi* buffalo during various lactations.

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