

Original Research Article

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Feeding Practices Followed by Nili Ravi Buffalo Farmers in Different Agroclimatic Zones of Punjab

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ABSTRACT

Keywords

Feeding practices, Nili Ravi buffalo farmers, Mineral mixture, Silage, Concentrate

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A purposive study was conducted on 300 Nili Ravi buffalo farmers selected from four agroclimatic zones of Punjab. The data was collected by personal interview cum questionnaire schedule consisting the feeding practices followed by the farmers. Data revealed that Majority (86.33%) of the farmers were doing group feeding and only (13.67%) of the farmers were doing individual feeding. Majority (63.67 %) of farmers were feeding extra diet to pregnant animals & maximum (73.33%) were from ACZ I(Asr). Majority (53.33 %) of farmers was feeding mineral mixture to the animals and maximum proportion (98.67%) of the Nili Ravi farmers was feeding concentrate to the buffaloes. Majority of the farmers (78%) were feeding common salt. Only 29.67% of the farmers were feeding silage and 12.33% of the farmers were feeding urea molasses block to the animals.

Introduction

Livestock sector plays a vital role in the Indian economy and also in the socio-economic development of millions of rural households. The total Livestock population is 535.78 million in the country. Total Bovine population (Cattle, Buffalo etc.) is 302.79 Million in 2019 which shows an increase of 1.0% over the last census (20th livestock

census, DAHD). Dairying has become an important secondary source of income for millions of rural families and has assumed the most important role in providing employment and income generating opportunities particularly for women and marginal farmers. Milk Production during 2016-17 and 2017-18 are 165.4 million tonnes and 176.3 million tonnes respectively showing an annual growth of 6.62%. The per capita availability of milk

is around 375 grams per day in 2017-18(Annual report 2018-19, DAHD).

The buffalo holds an important place in Indian rural economy. About 20.5% of the total livestock is contributed by buffaloes (20th livestock census, DAHD). Buffalo is considered as the dairy animal for 21st century due to its higher adaptability and productivity in changing climatic conditions (Siddiky and Faruque, 2017). Total Buffalo Population in the country is 109.85 Million during 2019 (20th livestock census, DAHD). Total buffalo population in Punjab is around 40 lac. In the Punjab buffaloes contribute to 6,575('000MT) of milk production in the year 2012-13(A statistical profile 2014, NDDDB). There are 12 standard breeds of buffaloes in the country (A statistical profile 2014, NDDDB). The Nili Ravi is the breed of domestic water buffalo. It is a dynamic breed under field conditions (Ali *et al.*, 2014).

Nili-Ravi buffaloes are found in almost all the districts, with major concentration in Amritsar, Gurdaspur and Ferozepur districts of Punjab, India (Buffalopedia, ICAR). Nili Ravi contributes 6.94% of total buffalo population in Punjab. The estimated population of Nili Ravi type of buffaloes in their breeding tracts (Ferozpur, Amritsar, Gurdaspur) is around 0.2 million (Vij and Tania, 2005). In 2007 the total population of Nili-Ravi buffalo was 384000 in Punjab(A statistical profile 2014, NDDDB). As Nili Ravi is native breed of Punjab which is kept for dairy, draft and meat purpose however not much information is available on rearing practices of such buffaloes ,keeping this in mind study has been planned.

Materials and Methods

The study was conducted in the four agroclimatic zones of Punjab, depending upon the availability of Nili Ravi buffaloes, these zones were- central plain zone, western plain zone, western zone and sub mountain

undulating zone. From each zone, districts were selected. From central plain zone- Amritsar & tarn taran was selected, from western plain zone- ferozpur was selected, from western zone- moga was selected and from sub mountain undulating zone- Gurdaspur was selected. From each district, further two tehsils were selected and from each tehsil further two villages were selected, from each village 15 respondents were selected, thus from each district 60 respondents were selected so total 300 Nili Ravi buffalo farmers were selected. The data was collected on feeding practices with the help of questionnaire cum interview schedule ,the collected data were carefully examined for its completeness and correctness before tabulation . for analysis, simple tabular techniques and standard appropriate statistical methods and tools like SPSS 20.0 and Microsoft excel were used.

Results and Discussion

Feeding frequency

Table 1 represents the distribution of Nili Ravi buffalo farmers according to the feeding frequency. Out of 300 farmers, major proportion (95.33%) of the farmers was feeding twice a day to the animals followed by 4.67% farmers feeding thrice a day. Majority (100 %) of the farmers who were feeding twice a day were from ACZ IV and minimum (86.67%) were from ACZ I(TT). Those who were feeding thrice a day, majority (13.33%) of the farmers were from ACZ I (TT) and minimum proportion (0%) from ACZ IV.

No farmer was feeding once a day to the buffaloes.

Dar *et al.*, (2017) had reported in their studies that maximum (76.50 %) of the farmers were feeding twice a day and these findings are similar to our findings.

Method of feeding

Table 1 depicts the distribution of Nili Ravi buffalo farmers according to method of feeding and it is revealed that only (13.67 %) of the farmers are doing individual feeding and majority (86.33%) of the farmers are doing group feeding. Farmers doing individual feeding, majority (26.67%) of the farmers were from ACZ III and minimum (6.67%) were from ACZ I(TT) and ACZ III. Farmers doing group feeding, maximum farmers (93.33%) were from ACZ I(TT) and ACZ III and minimum(73.33%) were from ACZ III (Fig. 1).

Chavan *et al.*, (2008) had reported in their

studies that only 13% of the farmers were doing individual feeding.

Feeding extra diet to pregnant animals

Out of 300 Nili Ravi farmers, majority(63.67 %) of farmers are feeding extra diet to pregnant animals and 36.33% are not feeding any extra diet, as explained in table 1. Out of farmers feeding diet to pregnant animals, maximum (73.33%) were from ACZ I (Asr) and minimum (46.67%) were from ACZ II. For those who are not feeding extra diet, maximum (53.33%) were from ACZ II and minimum (33.33%) were from ACZ I (TT) and ACZ IV.

Table.1 Distribution of NR Buffalo farmers according to feeding frequency, method of feeding & feeding of extra diet to pregnant animals

Parameter	Category	ACZ I		ACZ II	ACZ III	ACZ IV	Overall (n=300)
		Asr (n=60)	TT (n=60)	Frz (n=60)	Moga (n=60)	Grd (n=60)	
Feeding frequency	Once	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Twice	59 (98.33)	52 (86.67)	57 (95)	58 (96.67)	60 (100)	286 (95.33)
	Thrice	1 (1.67)	8 (13.33)	3 (5)	2 (3.33)	0 (0)	14 (4.67)
Method of feeding	Individual	9 (15)	4 (6.67)	8 (13.33)	16 (26.67)	4 (6.67)	41 (13.67)
	Group	51 (85)	56 (93.33)	52 (86.67)	44 (73.33)	56 (93.33)	259 (86.33)
Pregnant animals(extra diet)	Yes	44 (73.33)	40 (66.67)	28 (46.67)	39 (65)	40 (66.67)	191 (63.67)
	No	16 (26.67)	20 (33.33)	32 (53.33)	21 (35)	20 (33.33)	109 (36.33)

Figure in parenthesis indicate %age

Table.2 Distribution of NR Buffalo farmers according to mineral mixture feeding , concentrate feeding and type of concentrate

Parameter	Category	ACZ I		ACZ II	ACZ III	ACZ IV	Overall (n=300)
		Asr (n=60)	TT (n=60)	Frz (n=60)	Moga (n=60)	Grd (n=60)	
Mineral mixture feeding	Yes	18 (30)	42 (70)	34 (56.67)	44 (73.33)	22 (36.67)	160 (53.33)
	No	42 (70)	18 (30)	26 (43.33)	16 (26.67)	38 (63.33)	140 (46.67)
Concentrate feeding	Yes	56 (93.33)	60 (100)	60 (100)	60 (100)	60 (100)	296 (98.67)
	No	4 (6.67)	0 (0)	0 (0)	0 (0)	0 (0)	4 (1.33)
Type of concentrate	Homemade	7 (12.5)	11 (18.33)	10 (16.67)	4 (6.67)	6 (10)	38 (12.67)
	Readymade	23 (41.07)	32 (53.33)	35 (58.33)	40 (66.67)	39 (65)	169 (56.33)
	Both	26 (46.42)	17 (28.33)	15 (25)	16 (26.67)	15 (25)	89 (29.67)

Figure in parenthesis indicate %age

Table.3 Distribution of NR Buffalo farmers according to feeding of common salt, silage feeding and feeding of urea molasses block

Parameter	Category	ACZ I		ACZ II	ACZ III	ACZ IV	Overall (n=300)
		Asr (n=60)	TT (n=60)	Frz (n=60)	Moga (n=60)	Grd (n=60)	
Feeding of common salt	Yes	50 (83.33)	47 (78.33)	43 (71.67)	48 (80)	46 (76.67)	234 (78)
	No	10 (16.67)	13 (21.67)	17 (28.33)	12 (20)	14 (23.33)	66 (22)
Silage feeding	Yes	11 (18.33)	18 (30)	24 (40)	26 (43.33)	10 (16.67)	89 (29.67)
	No	49 (81.67)	42 (70)	36 (60)	34 (56.67)	50 (83.33)	211 (70.33)
Feeding of Urea Molasses Block	Yes	4 (6.67)	15 (25)	7 (11.67)	9 (15)	2 (3.33)	37 (12.33)
	No	56 (93.33)	45 (75)	53 (88.33)	51 (85)	58 (96.67)	263 (87.67)

Figure in parenthesis indicate %age

Table.4-Distribution of NR Buffalo farmers according to water availability, chopping of green fodder in different agroclimatic zones of Punjab

Parameter	Category	ACZ I		ACZ II	ACZ III	ACZ IV	Overall (n=300)
		Asr (n=60)	TT (n=60)	Frz (n=60)	Moga (n=60)	Grd (n=60)	
Water availability	24 hrs	52 (86.67)	49 (81.67)	46 (76.67)	44 (73.33)	38 (63.33)	229 (76.33)
	When needed	8 (13.33)	11 (18.33)	14 (23.33)	16 (26.67)	22 (36.67)	71 (23.67)
Chopping of Green fodder	Yes	60 (100)	60 (100)	60 (100)	60 (100)	60 (100)	300 (100)
	No	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Figure in parenthesis indicate %age

Figure.1 Distribution of Nili Ravi buffalo farmers according to method of feeding

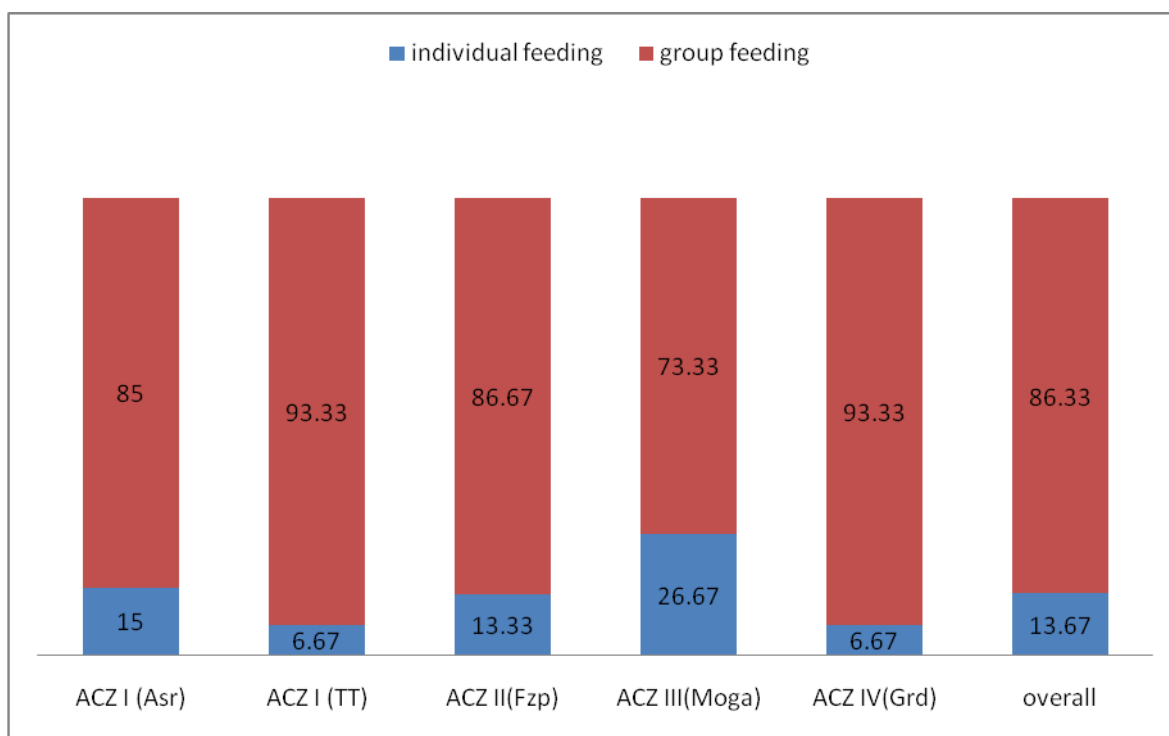


Figure.2 Distribution of Nili Ravi buffalo farmers according to silage feeding

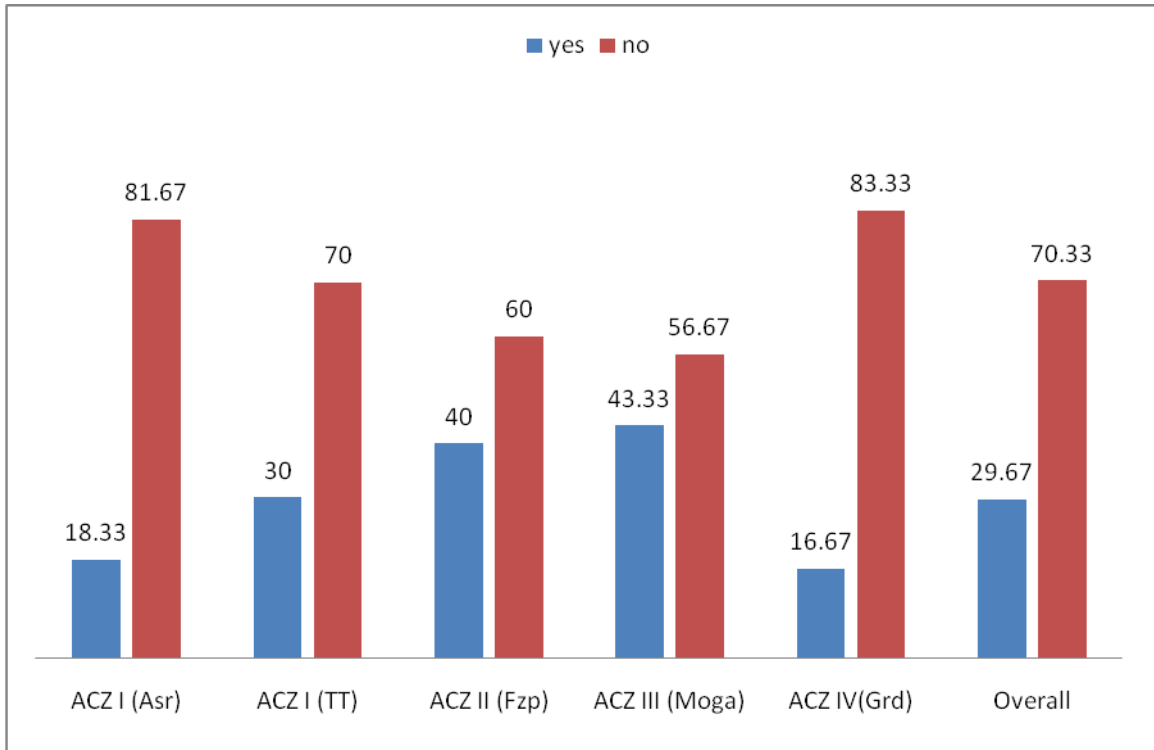
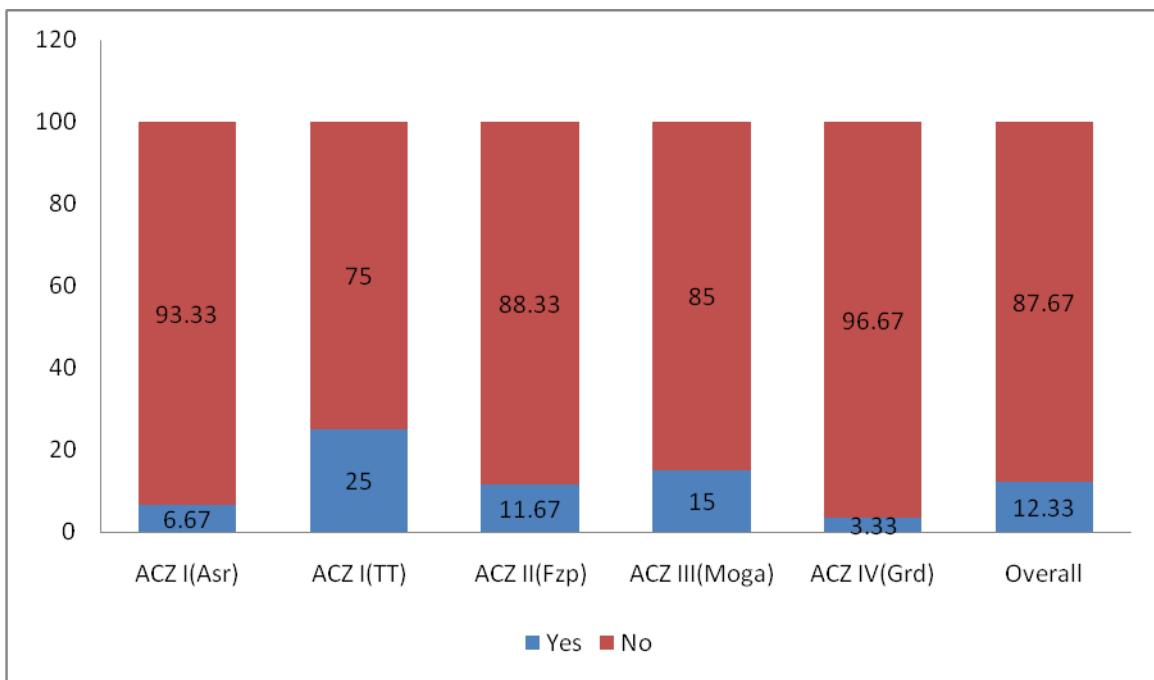


Figure.3 Distribution of Nili Ravi buffalo farmers according to feeding of Urea Molasses block



Mineral mixture feeding

Out of 300 Nili Ravi farmers, majority (53.33 %) of farmers are feeding mineral mixture to the animals whereas rest of the (46.67 %) are not feeding the same as depicted in table 9. Majority of the farmers (73.33%) who are feeding mineral mixture were from ACZ III and minimum (18%) were from ACZ I (Asr). For those who were not feeding, majority of the farmers (70 %) were from ACZ I (Asr) and minimum (26.67%) were from ACZ III.

It can be summarised from the above that good number of dairy farmers were feeding mineral mixture to their animals. Still, more extension is required in the field to educate the farmers regarding the importance of the mineral mixture for optimum production in animals.

Similar results have been found by Laldinpuui (2013) in her study in Punjab.

Aulakh *et al.*, (2011) had reported in their studies that 40.33% of the farmers were feeding mineral mixture to the animals.

Concentrate feeding

As represented in table no 2, maximum proportion (98.67%) of the Nili Ravi farmers are feeding concentrate to the buffaloes and only 1.33% of the farmers are not feeding concentrate. Maximum proportion (100%) of dairy farmers who were feeding concentrate were from ACZ I (TT), ACZ II, ACZ III & ACZ IV and minimum proportion (93.33 %) were from ACZ I(Asr).

Type of concentrate

Table 2 depicts the distribution of 300 Nili Ravi buffalo farmers according to the type of concentrate they are feeding to the animals. Out of 300, majority (56.33%) of the farmers are feeding readymade concentrate followed

by 29.67% are feeding both readymade and homemade type of concentrate and only 12.67% of farmers are feeding home made type of concentrate. For those who are feeding readymade concentrate, majority (66.67%) were from ACZ III and minimum (41.07%) were from ACZ I(Asr).

Maximum proportion (18.33%) of the farmers who were feeding homemade type of concentrate were from ACZ I(TT) and minimum proportion (6.67%) were from ACZ III.

Chavan *et al.*, (2008) had reported in their studies that majority (54%) of the farmers were feeding readymade type of concentrate to the animals.

Feeding of common salt

Table 3 represents the distribution of Nili Ravi buffalo farmers according to the feeding of common salt. Out of 300, majority of the farmers (78%) are feeding common salt and 22 % of the farmers are not feeding common salt. Maximum proportion (83.33%) of the farmers those who were feeding common salt were from ACZ I(Asr) and minimum proportion (71.67%) were from ACZ II. Those who were not feeding common salt, majority (28.33%) were from ACZ III and minimum (16.67%) were from ACZ I(Asr).

Silage feeding

Table 3 represents the distribution of Nili Ravi buffalo farmers according to the silage feeding. Only 29.67% of the farmers are feeding silage and rest 70.33% are not feeding. For those who are feeding, maximum farmers (43.33%) were from ACZ III and minimum (16.67%) were from ACZ IV.

For those who are not feeding, maximum proportion (83.33%) was from ACZ IV and minimum proportion (60%) was from ACZ II.

Dev (2014) reported in their studies that 45.8% dairy farmers were feeding silage to their animals while 54.2% dairy farmers were not feeding silage to their animals. Similar results have been found by Laldinpuii (2013) in her study in Punjab.

Aulakh *et al.*, (2011) had reported in their studies that only 8.06% of the buffalo farmers were feeding silage to the animals.

Feeding of urea molasses block

Table 3 represents the distribution of Nili Ravi buffalo farmers according to the feeding of urea molasses block to the animals. Only 12.33% of the farmers are feeding urea molasses block to the animals and major proportion (87.67%) of the farmers are not feeding the same. Maximum proportion(25 %) of the dairy farmers who were feeding were from ACZ I (Asr) and minimum proportion(3.33%) were from ACZ IV.

Water availability

In table 4 it is represented that whether Nili Ravi farmers were providing water to the animals 24hrs or providing them water when needed. Out of 300 farmers, 76.33% of the farmers were providing water to the farmers 24hrs and 23.67% of farmers were providing water to the animals when needed at regular intervals of time. For those were providing water regularly, majority (86.67%) of the farmers were from ACZ I (Asr) and minimum (63.33%) were from ACZ IV.

Chopping of green fodder

Table 4 depicts that all the 300 Nili Ravi buffalo farmers chop green fodder before feeding them to the animals.

From above, it can be concluded that 63% of the farmers are giving extra diet to pregnant

animals – maximum (73%) -ACZ I (D1). 78% of the farmers are adding salt to the diet of the animals –maximum (83.33%)- ACZ I (D1). 29% of farmers are undergoing silage feeding-maximum (43%) -ACZ III. 12.3% farmers are feeding urea molasses block to animals – maximum (25%) -ACZ I .Maximum feeding practices followed – ACZ I and minimum -ACZ IV.

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