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RESEARCH ARTICLE

A FOCUS ON FEEDING PRACTICES FOR BOVINE IN ARAJILINES BLOCK OF VARANASI, U.P.

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ABSTRACT

Feed and fodder available in four villages was studied. The preference for concentrates mixture like branded, self prepared, branded plus self prepared or no concentrates mixture was found 0.0, 61.45, 10.04 and 7.23 percent while 21.28 farmers did not maintain animal. As regard the green fodder, the farmers preferred in the form of chari, chari plus berseem, chari + berseem + crop-pen and only grass was 6.02, 15.26, 33.33 and 24.09 percent, respectively. The farmers fed dry fodder to their bovine in the form of wheat straw, wheat + paddy straw and wheat plus paddy straw plus other was found 7.63, 6.88 and 64.26 percent, respectively. It was found that 30.92, 23.29, 18.07 and 6.43 percent farmers preferred to fed concentrates mixture for maintenance purpose to milch animals, milch animals + calves, milch plus dry animals plus calves and no concentrates mixture, respectively. The extra concentrates mixture providing farmers to milch animals for production purpose was 45.92 percent and 54.08 percent fed ad-lib while 8.16 percent not maintained any record. The farmers gave concentrates mixture to the milking animals was found as 5.10 and 94.90 percent at milking time and before milking time, respectively while no one gave the concentrates mixture after milking.

Key Words **: Arajilines, Bovine, Feeding, Straw, Fodder, Concentrates**

India, with only 2.29% of the land area of the world, is maintaining about10.71% of the world's livestock population. The area under fodder cultivation is estimated to be about 4% of the gross cropped area which has remained static for the last four decades. The grazing land share also gradually diminishing because of other competing pressures on land. The shortage of fodder for livestock is primarily owing to the large population of livestock, and the limitations to increase the area under fodder cultivation due to the priority required to be given to food grains and other cash crops (GOI 2012-2013). India with 132.4 million tons (MT) of milk production / annum ranks first in the world (NDDB, 2013). The livestock population is expected to grow at the rate of 0.55% in the coming years, and the population is likely to be around 781 million by 2050. Though India is among the leading producers of milk, meat and eggs; productivity of our animals is 20-60% lower than the global average due to improper nutrition, inadequate

health-care and management, and also due to the lack of scientific breeding of animals. Half of the total losses in livestock productivity are contributed to by the inadequacy in supply of feed and fodder (ICAR, 2013). In India there is a shortage of about 26 MT of concentrates, 280 MT of green forages and 44 MT of straws / stovers for feeding to livestock. Therefore, to meet the nutrient requirements of livestock, there is need to improve, either efficiency of utilization of nutrients or to tap new non-conventional feed resources (Kaur, J. *et al*. 2010). Forage-based economical feeding strategies are required to reduce cost of quality livestock products; as feed alone constitutes 60-70% of milk-production cost. At present, the country faces a net deficit of 35.6% of green fodder, 26% of dry-crop residues and 41% of concentrate feed ingredients (ICAR, 2013). To sustain the current status or to achieve the higher targets in milk production, animal must be fed quality feedstuffs as per their production potential i.e., all the nutrients must be supplied in required quantity and proportion.

MATERIALS AND METHODS

For the present investigation, four villages of Arajilines block, Varanasi (U.P.) was selected. The proforma for survey were based on containing a number of searching question on various subjects like containing personal information, dairy bovine information, breeding, feeding, production, income and expenditure. The region has sub-tropical climate with an average rainfall of 1100 mm. The rainfall generally starts in the third week of June and lasts till the end of September. Maximum temperature during summer season may go about 46.5^{0}C, while the minimum temperature may reach even below 5.2^{0}C during the month of January. Each village was selected within a radius of 13 km from the block headquarter and situated in four directions namely, North, South, East and West. The villages namely Parmanandpur (A), Banipur(B), Shahanshahpur (C), And Darekhu (D) were also selected on the basis of the most populated villages of each direction of the Arajilines block. Number of houses and family heads were selected making a study of 10% family of each village. The selection started from the centre of the village and covered houses of all directions. The family heads or some responsible members of the family were contacted in the morning or at time in the evening. The raw data so obtained have been arranged in various tables denoting the number and percentage of each type of information. After tabulation the information has been narrated in terms of number and percentage of each village and also on the basis of the combined studies families of the four villages. In some cases the information has also been interpreted as maximum, minimum and the average, wherever possible they have been statistically analyzed for estimation of proximate principles as per procedures recommended by AOAC (1990). The collection of data and interviews with the farmers continued for two months.

RESULTS AND DISCUSSION

Concentrates mixture fed to bovine:

Concentrates mixture fed by the farmers to the bovine is shown in Table 1 as branded, self prepared, branded + self prepared and also the position where animal not maintained has been shown. We find that branded type of ration is not fed by farmers in any of the village. In village A, B, C and D, farmers were

Table 1: Concentrates mixture fed to bovine

Village	Branded (%)	Self- Prepared (%)	Branded + Self- prepared (%)	No Concentrate (%)	Animal not Maintained (%)	Total
A	0 (0)	26 (52)	2 (4)	6 (12)	16 (32)	50
B	0 (0)	66 (76.75)	5 (5.81)	5 (5.81)	10 (11.63)	86
C	0 (0)	35 (47.30)	14 (18.92)	3 (4.05)	22 (29.73)	74
D	0 (0)	26 (66.66)	4 (10.25)	4 (10.26)	5 (12.82)	39
Total	0 (0)	153 (61.45)	25 (10.04)	18 (7.23)	53 (21.28)	249

preferred to fed self- prepared concentrates mixture 26 (52%), 66 (76.75%), 35 (47.30%) and 26 (66.66%); branded + self prepared 2 (4%), 5 (5.81%), 14 (18.92) and 4 (10.28%); no concentrate 6 (12%), 5 (5.81%), 3 (4.05%) and 4(10.28%); animal not maintained 16 (32%), 10 (11.63%), 22 (29.73%) and 5 (12.82%),respectively. On overall position 61.45% farmers preferred self prepared ration, 10.04% branded plus self prepared while 7.23% did not give any concentrate and 21.29% did not maintained any animal.

Green fodder fed to bovine:

The different type of green fodder fed by farmers to the bovine have classified in the Table 2 as chari and berseem, chari + berseem + crop-pen, not animal maintained, only grass. In village A, B, C and D farmers were fed chari 2 (4%), 6 (6.98%), 4 (5.41%) and 3 (3.70%), respectively. Chari and berseem fed by farmers in village A, B, C, and D was 5 (10), 17(19.77%), 12(16.22) and 4(10.25%); chari + berseem + crop-pen was 11 (22%), 28 (32.56%), 28 (37.84%), and 16 (41.02%); not animal maintained was 16 (32%), 25 (29.06%). 8 (10.81%), and 11 (23.21%); only grass was 16 (32%), 25 (29.06%), 8 (10.81%) and 11 (28.21%), respectively.

The combined position of farmers was that 15 (6.02%) used chari, 38 (15.26%) used chari plus berseem, 83 (33.33) used chari +berseem + crop-pen, 53 (21.28%) not maintained any animal and 60 (24.09%) used only grass.

Dry fodder fed to bovine :

The different type of dry fodder fed by farmers is shown in Table 3.

The wheat straw fed by farmers in four villages A, B, C and D were 3 (6%), 4 (4.65%), 10 (13.51%) and 2 (5.13%); wheat + paddy straw 5 (10%), 2 (2.32%), 6 (8.11%) and 4 (10.26%); wheat + paddy

Table 2 : Green fodder fed to the bovine

Village	Chari (%)	Chari & Berseem (%)	Chari + Berseem + Crop-pen (%)	Not animal maintained (%)	Only grass (%)	Total
A	2 (4)	5 (10)	11 (22)	16 (32)	16 (32)	50
B	6 (6.98)	17 (19.77)	28 (32.56)	10 (11.63)	25 (29.06)	86
C	4 (5.41)	12 (16.22)	28 (37.84)	22 (29.72)	8 (10.81)	74
D	3 (7.70)	4 (10.25)	16 (41.02)	5 (12.82)	11 (28.21)	39
Total	15 (6.02)	38 (15.26)	83 (33.33)	53 (21.28)	60 (24.09)	249

Table 3: Dry fodder fed to the bovine

Village	Wheat straw (%)	Wheat + Paddy straw (%)	Wheat + paddy straw + other (%)	No animal maintained (%)	Total
A	3 (6)	5 (10)	26 (52)	16 (32)	50
B	4 (4.65)	2 (2.32)	70 (81.48)	10 (11.63)	86
C	10 (13.51)	6 (8.11)	36 (48.65)	22 (29.73)	74
D	2 (5.13)	4 (10.26)	28 (71.79)	5 (12.82)	39
Total	19 (7.63)	17 (6.83)	160 (64.26)	53 (21.28)	249

Table 4: Concentrates mixture feeding to bovine preferred for maintenance

Village	Milch animal (%)	Milch animals + calves (%)	Milch + dry animals + Calves (%)	No extra ration (%)	Animal not maintained (%)	Total
A	16 (32)	9 (18)	5 (10)	14 (8)	16 (32)	50 (100)
B	41 (47.67)	17 (19.77)	12 (19.77)	6 (6.98)	10 (11.63)	86 (100)
C	11 (14.86)	17 (22.97)	22 (29.75)	2 (2.71)	22 (29.73)	74 (100)
D	9 (23.08)	15 (38.46)	6 (15.38)	4 (10.26)	5 (12.82)	39 (100)
Total	77 (30.92)	58 (23.29)	45 (18.07)	16 (6.43)	53 (21.29)	249 (100)

straw + other 26 (52%), 70 (81.40%), 36 (48.65%) and 28 (71.79%), respectively. Animal not maintained were 10 (32%), 10 (11.63%), 22 (29.73%) and 5 (12.82%), respectively. The combined position of four villages was 19 (7.03%), 17 (6.83%), 160 (64.26%) and 53 (21.28%), respectively for the above type of dry ration feeding.

Concentrates mixture feeding for maintenance:

Table 4 show the feeding of concentrates for maintenance purpose. In the village A, the concentrates mixture feeding for maintenance given by farmers to milch animals, milch animals + calves, milch + dry animals + calves, no extra ration and animal not maintained were 16 (32%), 9 (18%), 5 (10%), 4 (8%) and 16 (32%); in the village B, 41 (47.67%), 17 (19.77%), 12 (13.95%), 6 (6.98%) and 10 (11.63%); in the village C, 11 (14.86%), 17 (22.97%), 22 (29.75%), 2 (2.71%) and 22 (29.73%); in the village D, 9 (23.08%), 15 (38.46%), 6 (15.38), 4 (10.26%) and 5 (12.82%), respectively.

The combined position of four villages was 30.92%, 23.29% 18.07% farmers preferred maintenance ration for milch animals, milch animals + calves, milch + dry animals + calves, respectively and 6.43% farmers did not give any extra ration.

Concentrates mixture for production purpose :

The concentrates mixture fed to bovine by the farmers for production purpose are shown in Table 5. In the four villages A, B, C and D farmers give the ration for milk production purpose as milch animal were 12 (35.29%), 32 (42.11%), 36(89.23%) and 10 (29.41%); as fed ad-lib was 22 (64.71%) 44 (57.89%), 16 (30.17%) and 24 (70.59%) farmers and as no record maintained farmers were 0 (0%), 4 (5.26%), 10 (19.23%) and 2 (5.88%), respectively.

The combine position of four villages A, B, C and D farmers fed the concentrates mixture for production purpose as milch animal, fed ad lib and not recorded was found 90 (45.92%), 106 (54.08%) and 16 (8.16%), respectively.

Time of feeding for concentrates mixture:

The different time of feeding by farmers in the four villages are shown in Table 6. In the four villages A, B, C, D concentrates mixture was given at milking time by 2 (5.88%), 3(3.95%), 4(7.70%), 1 (12.94%) and as before milking 32 (94.12%), 73(96.05%), 48(92.30%), 33(97.06%) farmers, respectively while after milking no one gave the concentrates mixture.

The combine position of 4 villages A, B, C and D where 5.10% farmers were production ration fed to the animals at milking time and 94.90% before milking.

Table 5: Concentrates mixture to bovine for production purpose

Village	Record for milch animal	Feeding on ad lib	Record not maintained	Total
A	12 (35.29)	22 (64.71)	0 (0)	34 (100)
B	32 (42.11)	44 (57.89)	4 (5.26)	76 (100)
C	36 (69.23)	16 (30.77)	10 (19.23)	52 (100)
D	20 (29.41)	24 (70.59)	2 (5.88)	34 (100)
Total	90 (45.92)	106 (54.08)	16 (8.16)	196 (100)

Table 6: Time of feeding for concentrates mixture

Village	At milking	Before milking	After milking	Total
A	2 (5.88)	32 (94.12)	0 (0)	34 (100)
B	3 (3.95)	73 (96.05)	0 (0)	76 (100)
C	4 (7.70)	48 (92.30)	0 (0)	52 (100)
D	1 (2.94)	33 (97.06)	0 (0)	34 (100)
Total	10 (5.10)	186 (94.90)	0 (0)	196 (100)

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