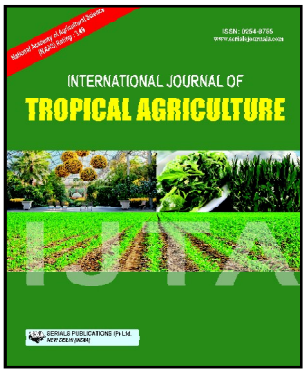

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Management of Lesser Known Kathani Cattle of Vidarbha Region

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Abstract: Data collected on different management practices of Kathani cattle from 9,750 farmers of 118 randomly selected villages distributed in thirteen tehsils of three districts from Vidarbha region of eastern Maharashtra were analyzed. As Kathani cattle is not a registered cattle breed at national level, consequently these animals are categorized as non-descript animals in Livestock Census of Government of India. The results of the present study indicated that nearly 96% Kathani cattle owners were found to provide housing to their animals and only 4% owners kept their animals without any housing facility. About 87% of respondents provided shelter during night only and 7.4% both during day and night. Regarding feed and fodder resources, it was noticed that overall 74.7% respondents cultivated fodder for their animals and general fodder in the area was leftover (after crop harvest) of paddy locally called Tanis and soybeans, mung, wheat, cowpea, chickpea, pigeon pea, black gram locally called Kutar as well as local grasses. The feed and fodder analysis revealed that Kathani animals being reared on fodder of very low nutritive value content like Tanis, different Kutars like chickpea, pigeon pea, wheat, mung, black gram and Kukus, which had average dry matter content 83.94%, crude fiber 25.21% and crude protein 9.59%. It was found that natural service is more common and preferred breeding method adopted by 94.8% owners and those who bred their animals through artificial insemination (A.I.) were only 5.2%. The 61.9% Kathani cattle possessors in survey area experienced incidence of some of the contagious diseases. The prevalence of other health disorders like digestive disorder, general fever, lameness, poisoning and respiratory disorder were also noticed as 17.26%, 4.96%, 0.76%, 0.43% and 6.21%, respectively. Majority (72.55%) of cattle holders were found vaccinating their animals against various contagious diseases and out of this 30.4% owners opted vaccination against all the three diseases, while 48.7% only for FMD and 20.9% only for HS & BQ. The traditional practices of group grazing of animals being followed in the Kathani survey area, which promotes zero input production system. The availability of common place to

gather the animals before they actual go to grazing is locally called as 'Aakhar' in Gadchiroli district and 'Gohan' in Chandrapur and Gondia district and the person who takes care of these animals is locally known as 'Gayaki' (animal herder).

Keywords: Kathani cattle, management practices, feed and fodder resources, group animal grazing, Aakhar/Gohan, Gayaki, Vidarbha region, Maharashtra state.

INTRODUCTION

In addition to 43 recognized breeds of cattle at national level, various other lesser known cattle populations exist in India, which are not yet been properly documented and registered, hence categorized under non-descript in Livestock Census of Government of India. Kathani cattle, which are distributed in Chandrapur, Gadchiroli, and Gondia districts of Vidarbha region of eastern Maharashtra state, is one of such important indigenous draft purpose cattle population. Being considered under non-descript category, much attention was not paid towards their overall development. There are only scanty published reports, which ultimately do not throw much light on the status of the breed, general management practices being followed by the livestock owners, overall feed, fodder status for animals and traditional practice of group animal grazing being followed in the breeding tract since ancient times. Therefore, an attempt was made to study these management practices and other related aspects being followed for rearing of these animals by the owners in breeding tract.

MATERIAL AND METHODS

A study has been conducted under the aegis of NBAGR, Karnal for survey, evaluation and characterization purpose of Kathani animals during the period of December 2017 to May 2018 in 118 randomly selected villages distributed in thirteen tehsils spread over three districts i.e. five tehsils from Chandrapur and four each from Gadchiroli and Gondia in Vidarbha region of Eastern Maharashtra. Under this survey total 9750 farmers were covered and individual farmer information on general management practices followed for these animals, feed and fodder resources available as well as ancient old practices like group animal grazing was collected through as per technical programme described by Singh and Sharma (2016). The feed and fodder samples were collected with the help of enumerators and nutritional analysis for dry matter (DM %), crude protein (CP %), crude fiber (CF %) and insoluble ash (silica %) were subjected for proximate analysis (AOAC, 1995). The collected information has been analyzed by using standard statistical procedure given by Snedecor and Cochran (1967).

RESULTS AND DISCUSSION

The general management practices followed for Kathain cattle described under broad heads like housing pattern, fodder production, feed used, method of breeding, prevalence of diseases, vaccination and ancient old practice of animal group grazing and its other components like Aakhar / Gohan, Gayaki and difficulties faced by Gayaki etc. are discussed as below;

Housing Pattern: The housing pattern for Kathani cattle in survey area indicated that nearly 96 per cent owners found to provide housing to their animals and 4.00 per cent owners noticed keeping their animals without any housing facility (Table-1). In this, 86.99 per cent respondents provided shelter during night-time and 7.41 per cent owners both day & night time. Amongst those who provided housing, 63.14 per cent respondents kept their animals in open paddock and remaining (36.86%) provided close type housing. Being open paddock urine drainage was

pukka type (81.85%) and having overall sanitary condition clean (75.73%). Nearly 34.14 per cent cattle owners had separate housing having kutcha type ceiling (65.59%), which was made from wood or dried cotton straws and 34.41 per cent respondents had pukka type housing facilities constructed from either bricks, stones using clay as a cementing material as part of residence (64.86%). Flooring of the housing is mostly kutcha type (75.74%) and made up of mud and stones. Rathor *et al.* (2010) in Churu district of Rajasthan reported all the cattle keepers had kutcha floor in animal shed. Majority of the respondents having their animal housed near their residence or as a part of their residence with half wall housing (82.74%) for the protection of animals from rains, wind and wild animals. In Churu district of Rajasthan 58.50 per cent cattle owners kept their animals near dwelling house.

Table 1
Housing pattern for Kathani cattle in survey area

#	*Particulars*	*Type*	*Districts*			*Total*
			Chandrapur	*Gadchiroli*	*Gondia*	
1	Provision of housing	Day	19 (0.49)	105 (4.61)	32 (0.90)	156 (1.60)
		Night	3154 (80.79)	2050 (89.99)	3278 (91.87)	8482 (86.99)
		Both	504 (12.91)	3 (0.13)	215(6.03)	722 (7.41)
		None	227 (5.81)	120 (5.27)	43 (1.21)	390 (4.00)
2	Type	Open	2878 (78.27)	518 (24.00)	2514 (71.32)	5910 (63.14)
		Closed	799 (21.73)	1640 (76.00)	1011 (28.68)	3450 (36.86)
3	Ceilling	Kutcha	2668 (72.56)	1140 (52.83)	2331 (66.13)	6139 (65.59)
		Pukka	1009 (27.44)	1018 (47.17)	1194 (33.87)	3221 (34.41)
4	Flooring	Kutcha	2395 (65.13)	1484 (68.77)	3210 (91.06)	7089 (75.74)
		Pukka	1282 (34.87)	674 (31.23)	315 (8.94)	2271 (24.26)
5	Location	Separate	896 (24.37)	1098 (50.88)	1295 (36.74)	3289 (34.14)
		Adjoined	2781 (75.63)	1060 (49.12)	2230 (63.26)	6071 (64.86)
6	Wall	Full	477 (12.97)	988 (45.78)	151 (4.28)	1616 (17.26)
		Half	3200 (87.03)	1170 (54.22)	3374 (95.27)	7744 (82.74)
7	Ventilation	Well	944 (25.67)	1396 (64.69)	1817 (51.55)	4157 (44.41)
		Poor	2733 (74.33)	762 (35.31)	1708 (48.45)	5203 (55.59)
8	Sanitary condition	Clean	3397 (92.39)	1658 (76.83)	2033 (57.67)	7088 (75.73)
		Not clean	280 (7.61)	500 (23.17)	1492 (42.33)	2272 (24.27)
9	Urine drain	Kutcha	436 (11.86)	1069 (49.54)	194 (5.50)	1699 (18.15)
		Pukka	3241 (88.14)	1089 (50.46)	3331 (94.50)	7661 (81.85)

Figures in parentheses indicates percentage of respondents

Fodder production: Overall 74.70 per cent respondents cultivated fodder for their animals (Table-2). The respondents from Gondia district were aggressor (48.10%) while Gadchiroli and Chandrapur district farmers were at par (25.74 & 26.16%). General fodder in the area noticed to be leftover (crop harvest) of paddy locally called Tanis and soybeans, mung, wheat, cowpea, chickpea, pigeon pea, black gram locally called Kutar as well as local grasses. Majority of farmers were observed using un-chaffed fodder (86.25 %.), which might be because of major source of fodder is after harvest leftover which does not require chopping. Some farmers those who had irrigation facility noticed growing jowar, maize, berseem etc. and they cut it into pieces while offering to animals for which, they used tools like pick-axe locally called 'Veelai' (66.63%) and axe (33.37%).

Table 2
Fodder production and its availability in survey area

District	*Fodder production*		*Offer method*		*Tools used*	
	Grown	*Not grown*	*Chaffed*	*Un-chaffed*	*Veelai*	*Axe*
Chandrapur	1875 (25.74)	2029 (82.25)	129 (9.62)	3775 (44.89)	463 (33.80)	57 (8.31)
Gadchiroli	1905 (26.16)	373 (15.12)	561 (41.83)	1717 (20.42)	351 (25.62)	467 (68.08)
Gondia	3503 (48.10)	65 (2.63)	651 (48.55)	2917 (34.69)	556 (40.58)	162 (23.62)
Total	7283 (74.70)	2467 (25.30)	1341 (13.75)	8409 (86.25)	1370 (66.63)	686 (33.37)

Figures in parentheses indicates percentage of respondents

Feed used: Type of feed used by Kathani cattle owners in survey area and its method of feeding is presented in Table 3. It was noticed that 10.76 per cent respondents were unable to respond the query and those who responded out of that 62.36 per cent farmers observed to be offering some or other kind of feed like crushed home-made (93.44%) rice bran locally called 'Kukus' and grains of wheat, oat, cotton seed cake etc. to their animals. Gadchiroli district owners (73.44%) were topper for offering feed to their animals and Chandrapur district owners were laggards (50.90%). This might be because of Gadchiroli district farmers grow rice on large scale, which ultimately produce Kukus as a bye product while processing of rice for home consumption. It was seen that soaking of grains (98.50%) was preferred by the owners to cooking (1.50 %) before feeding to the animals. The soaking of home- made concentrate before feeding to animals is more common (78.50%) in Churu district of Rajasthan (Rathore *et al*, 2010). 86.40 per cent respondents found to give separate feed and other than (77.76%) milking time.

The laboratory proximate feed and fodder analysis showed that Kathani animals being reared on very low nutritive value content fodder like Tanis contains 46.81% dry matter, 5.85% crude protein, 32.80% crude fiber, 3.45% silica. Different Kutars like chickpea contains 93.70% dry matter, 12.18% crude protein, 37.18% crude fiber and 3.62% silica

whereas, pigeon pea contains 87.24% dry matter, 8.11% crude protein, 30.66% crude fiber and 3.96% silica; wheat kutar had 87.99% dry matter, 9.31% crude protein, 18.27% crude fiber; mung had 92.43% dry matter, 9.55% crude protein, 23.14% crude fiber; black gram 86.92% dry matter, 8.87% crude protein, 24.14% crude fiber and Kukus contains 92.49% dry matter, 13.28% crude protein, 10.29% crude fiber and 2.13% silica. Although feed and fodder being provided is deficit of nutrient content not a single farmer noticed provided any mineral supplement to their animals, however a common practice of storing meal leftover like stale food, curry, hand wash water etc. is common in survey area, such leftover is stored in a separate vessel made of either wood, stone or cement concrete having capacity of 8 to 10 lit and fixed structure locally called '*Dongi*'. Whatever such leftovers gathers in whole day mix with some quantity of kukus and fed to animals in next day morning especially to working bullocks and milking cows.

Table 3
Feed used for Kathani cattle in survey area

Type	*Particulars*	*Districts*			*Total*
		Chandrapur	*Gadchiroli*	*Gondia*	
Feed offered	Non respondents	715 (18.31)	239 (10.49)	95 (2.66)	1049 (10.76)
	Yes	1987 (50.90)	1673 (73.44)	2420 (67.83)	6080 (62.36)
	No	1202 (30.79)	366 (16.07)	1053 (29.51)	2621 (26.88)
Feed type	Factory made	20 (1.01)	370 (22.12)	9 (0.37)	399 (6.56)
	Home made	1967 (98.99)	1303 (77.88)	2411 (99.63)	5681 (93.44)
Feeding method	Soaked	1949 (98.09)	1662 (99.34)	2378 (98.26)	5989 (98.50)
	Cooked	38 (1.91)	11 (0.66)	42 (1.74)	91 (1.50)
	Mixed C fodder	699 (35.18)	55 (3.29)	73 (3.02)	827 (13.60)
	Separate	1288 (64.82)	1618 (96.71)	2347 (96.98)	5253 (86.40)
	At milking time	673 (33.87)	74 (4.42)	605 (25.00)	1352 (22.24)
	Other time	1314 (66.13)	1599 (95.58)	1815 (75.00)	4728 (77.76)
Total	1987 (32.68)	1673 (27.52)	2420 (39.80)	6080 (100)	

Figures in parentheses indicates percentage of respondents

Method of breeding: Natural service is more common and preferred breeding method adopted by 94.83 per cent cattle owners (Table 4). The result corresponds with the findings of Rathore *et al.* (2010),

Table 4
Method of breeding practiced for Kathani cattle in survey area

Breeding method	*District*			*Overall*
	Chandrapur	*Gadchiroli*	*Gondia*	
Natural service	3549 (90.91)	2254 (98.95)	3443 (96.50)	9246 (94.83)
A.I.	355 (9.09)	24 (1.05)	125 (3.50)	504 (5.17)
Total	3904	2278	3568	9750

Figures in parentheses indicates percentage of respondents

Elniema *et al.* (2011) and Mingoas Kilekoung *et al.* (2014), who reported 86.00, 91.10 and 87.40 per cent adopted natural service for animals breeding, respectively. Those who had nearby facility of Artificial insemination (A.I.) also preferred to breed their animals through A.I. by 5.17 per cent cattle owners. The respondents from Chandrapur district (9.09%) were aggressor for using this A.I. facility compared to other districts this might be due to good networking of A.I. facility in their area.

Prevalence of diseases and vaccination: Although indigenous animals are considered to be comparatively resistant to contagious diseases as compared to crossbred animals, 61.91 per cent Kathani cattle possessors in survey area experienced incidence of contagious diseases. The incidence of diseases like FMD and HS & BQ was found to be 26.48 and 4.81 per cent, respectively (Table-5). The prevalence of other health disorders like digestive complaints, general fever, lameness, poison and respiratory disorder were also noticed and their percentage was 17.26, 4.96, 0.76, 0.43 and 6.21, respectively. It was further noticed that incidence of FMD diseases was more in Chandrapur district (28.13%), digestive complaints were more in Gondia district (34.78%) however, animals of Gadchiroli district were least sufferers from all disease and health ailments except HS&BQ, this might be because of percentage of non-respondents was maximum compared to other two districts (67.38).

Majority (72.55%) cattle holders were found vaccinating their animals against various contagious diseases and out of this 30.42 per cent owners opted vaccination against all the three diseases, while 48.71 per cent performed only FMD vaccination and 20.86 per cent only HS&BQ vaccination. These findings support to the results of Sunil Kumar *et al.* (2017), who reported 40.00 per cent respondents from Thar Desert region of Rajasthan followed vaccination against contagious diseases, however findings of Eqbal (2011) and Pandey and Meena (2013) were in contradiction who reported that vaccination was not practiced by majority of the respondents. For treating sick animals, nearly 94.31 per cent respondents preferred veterinary treatment. The findings of the study conducted by Yadav *et al.* (2009) among the tribal dairy farmers of Dungarpur district of Rajasthan also reported that majority of the farmers consulted veterinary doctor for the treatment of their animals. Nearly 4.82 per cent respondents treated their animals with local medication and 0.88 per cent animal owners preferred Ayurveda treatment to recover their animals.

General practices followed in the survey area

Animal group grazing: The traditional practices of group grazing of animals was followed in the Kathani survey area. This might be because of availability of open grazing land especially in forest area and manpower required for herding the animals. This promotes zero input system, what-ever they earn from animals like small quantity of milk, manure and bullock for agriculture are surplus income to them. There are two major components of this group grazing; one is availability of common place to gather the animals before they actual go to grazing locally called as 'Aakhar' in Gadchiroli district and 'Gohan' in Chandrapur and Gondia district and other is the person who takes care of these animals locally known as 'Gayaki'.

Aakhar / Gohan: A common place where animal owner fetch their animals and gather all animals together before they actual go for grazing. This place is generally of gram-panchat owned or in some villages it belongs to forest department. The area is of generally one or one and half acres which accommodate 80 to 100 animals of different age groups. The herder locally known as 'Gayaki' wait for one and half to two hours in this Aakhar till all the animal gathers. The herder keeps records of individual farmers' number of animals he takes for grazing. The farmers start bringing animals at about

Table 5
Prevalence of diseases ailments and vaccination followed in survey area

Type	*Particulars*	*District*			*Total*
		Chandrapur	*Gadchiroli*	*Gondia*	
Commonly	Non respondents	1676 (42.93)	1535 (67.38)	600 (16.82)	3811 (39.09)
observed	Digestive complaints	428 (10.96)	14 (0.61)	1241 (34.78)	1683 (17.26)
disease ailments	FMD	1098 (28.13)	547 (24.01)	937 (26.26)	2582 (26.48)
	General fever	341 (8.73)	24 (1.05)	119 (3.34)	484 (4.96)
	HS & BQ	270 (6.92)	114 (5.00)	85 (2.38)	469 (4.81)
	Lameness	28 (0.72)	10 (0.44)	36 (1.01)	74 (0.76)
	Poison	2 (0.05)	28 (1.23)	12 (0.34)	42 (0.43)
	Respiratory disorder	61 (1.56)	6 (0.26)	538 (15.08)	605 (6.21)
Total	3904	2278	3568	9750	
Treatment followed	Ayurveda	32 (1.44)	2 (0.27)	18 (0.61)	52 (0.88)
	Local	12 (0.54)	93 (12.52)	181 (6.10)	286 (4.82)
	Veterinary	2184 (98.03)	648 (87.21)	2769 (93.30)	5601 (94.31)
Total	2228	743	2968	5939	
Vaccination	Yes	3511 (99.26)	1354 (85.97)	1133 (35.91)	5998 (72.55)
followed	No	26 (0.74)	221 (14.03)	2022 (64.09)	2269 (27.45)
Total	3511	1354	1133	5998	
Vaccination against	Only FMD	1672 (52.84)	561 (42.15)	212 (40.46)	2445 (48.71)
	Only H.S & BQ	321 (10.15)	436 (32.76)	290 (55.34)	1047 (20.86)
	All three	1171 (37.01)	334 (25.09)	22 (4.20)	1527 (30.42)
Total		3164	1331	524	5019

7.00 am onwards and they remain up to 10.00 am in this Gohan. This practice is followed every day in the morning hours. During this time dung defecated by the animals' is a property of herder. The general cleaning of this place is the responsibility of herder. The dung collected by the herder sale this as a manure on tractor trolley basis Rs.700 to 800 per trolley to the interested farmers and thus 6 to 7 trolleys of manure collected in a year from these animals. After grazing when animals come back they directly go to respective owner's house and does not come again to this Aakhar. Such Aakhars are one or two in each village depending upon number of animals and herder availability.

Gayaki: A person who works as herder is locally known as Gayaki and he accepted this as a sole business to earn bread and butter. Generally such

persons are illiterate or have education up to 2nd to 3rd standard having old age people. One Gayaki takes 50 to 60 animals for common grazing purpose and if animal number increases then more than one person involves in this to take care of animals. For each animal owner has to pays Rs.200 per month for adult animals, the suckling calves and animals below one year are free. The Gayaki gets on an average 10,000 to 12,000 per month. Along with this token amount in some parts paddy is also given to the Gayaki on mutual understanding may be 30 to 40 kg for a year. During his absence may be due to his house work, any death, marriage or own illness he has to search and send reliever as a herder. The reliever get Rs.200 per day and some area it noticed to be Rs.150 per day. The herders usually take only break-fast and whole day he takes only water up to 2 to 3 lit. During animal grazing hours the events happened with animals like natural service, delivery of animals, wild animals attack, any animal missing etc. he informs to respective owners. The pregnancy diagnosis is not common and the owners only know when the animal is 5 to 6 months pregnant. The herder gets reward/award from owner in kind like cloths and some token amount ranging from Rs.20 to 50 on the occasions of Deepawali this reward is locally known as 'Bojara'. The Gayaki visits each owner and collect this Bojara once in a year. The Gayaki business runs only 10 months in a year from June to March and on an average 8 to 10 km distance they have to travel behind the animals depending upon area and availability of grazing land and drinking water to the animals. In April and May months animals kept without herder owing to agriculture fields empty having leftovers of crop harvest to graze the animals.

Difficulties faced by Gayaki: During personal discussion with some of animal herders who are doing this business since more than nine to ten years narrated that various difficulties like shrinkage of grazing land day by day hence have to walk more distance behind animals, fear of attack of wild animals like tiger, wolf and bear on animals as well as themselves, suddenly abnormal behavior of animals which makes difficult to control them, non-receipt of regular payment from cattle owners, free of cost rearing of animals having below one year age, shortage of drinking water to animals especially in summer months requires to cover long distance in search of water, difficulty in getting reliever in case of illness etc.

Difficulties faced by animal owners: As like Gayaki animal owners have their own constraints like in earlier days getting Gayaki was not a problem but the young generation does not want to accept it as business having no future and lucrative job, hence they have to reduce the animal herd size, being the animals non-descript, economic value of animals not much hence unable to reimburse the payment of Gayaki on time, mono cropping pattern i.e. paddy cultivation that too on rain water hence have to face fodder shortage, market value of animal reduced drastically after ban on animal slaughter and animal race.

Alternative to Gayaki: The cattle owners especially from Deori and Sadak Arjuni block in Gondia district came together and they formed a group to takes care of animals as a herder as like that of relay race system. Four to six cattle owner came together having 60 to 80 animals in a group and each day two owners will take care of all animals for two days and for next two days another two owners will work a Gayaki, thus they distribute weekly days among themselves by mutual understanding which helped to solve the problem of animal herding. Such groups may be one or two or more depending upon number of animals in each village. The study results of Rathore *et. al.* (2010) from Churu district of Rajasthan revealed that group feeding was followed by 68.75 per cent respondents and they grazed the animals in fallow/ harvested field.

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