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Article

Socio-economic condition of goat farmers and management practices of goats in selected areas of Munshiganj district of Bangladesh

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Abstract: A total of 100 respondents were randomly selected to assess the socio-economic condition and management practices of goat rearing in Munshiganj district of Bangladesh. Data were collected through interviewing with pre-tested questionnaires from July to December, 2017. The result revealed that most of the goat keepers were middle aged and illiterate. Agricultural crop farming (47.0%) was the main occupation. Majority of the farmers kept their goats on their own land for at least 2 years (44.0%). Sixty percent of the farmers used own capital and rest of them took loan from bank/or NGO's loan for rearing goats. The highest numbers of goats were found Black Bengal (55.0%) followed by Crossbred (24.0%) and Jamnapari goat (21.0%) reared mainly for meat purpose (80.0%) in semi-intensive farming system. In this study area, the average birth weight of kid was 0.91 kg and market weight 16.5 kg. Weaning and slaughter age were 4 and 18 months, respectively. The average age at 1st heat, gestation period, post-partum heat period, average prolificacy and kidding interval was 7.4 months, 5.1 months, 45.5 days, 2.1 kids per kidding and 8.5 months, respectively. Fifty four percent of respondents reported that their goats were mated by using a buck belonging to other farmers; the cost was Tk. 20-30 per mating. The farmers fed their goats with locally available roughages and tree leaves in the selected areas. Some goat farmers (5.0%) were practicing to supply concentrate feeds to their goats. The results showed that family member's especially young women and children (67.0%) are more likely to own and raise small ruminants. They did not follow any vaccination and de-worming programme.

Keywords: goats; goat farmers; socio-economic condition

1. Introduction

Goat is a multi-functional animal and plays significant role in the economy and nutrition of landless, small and marginal farmers in the country (Rawat *et al*., 2015). Goat has been rearing since the time immemorial. It is observed about 80% of the goats are being reared by the landless and marginal farmers living in the rural areas of the country and rearing goats is one of the major sources of income of the poverty stricken people. About 32% of the total farm households in Bangladesh are involved in rearing goat under scavenging condition (BBS, 2006). At present, goat farming has become a profitable business because its requires low investment as well as it's an effective instrument for poverty alleviation and also women empowerment for the rural poor people. Among the 54.745 million ruminant livestock population the domestic goat (*Capra hircus*) comprises 25.931 million which is near about 47.37% of total livestock population and represent the highest population in Bangladesh (DLS, 2017). But a high level of kid mortality is a significant barrier to increasing goat production in tropical countries. So, the Husbandry practices and management of goat rearing should be improved. In order to undertake any development work in the rural area, the goat production problems and prospects should be identified. The present study was therefore undertaken to assess the potentiality of goat production in selected

areas of Munshiganj district of Bangladesh. At present, in Munshiganj district goats are found abundantly, but there is little reliable information regarding their productive and reproductive potential, management practices of goats and socio economic condition of goat farmers. Considering the above facts and circumstances, the study was designed to know the socio economic status of goat farmers, the productive and reproductive potentialities and management practices of goats in the selected areas of Munshiganj district of Bangladesh.

2. Materials and Methods

2.1. Data collection in the study areas

The data were collected through personal interviewing from selected areas of Munshiganj district (Table 1). The interview schedule was carefully prepared based on the objectives of the study. The information was collected on pre-tested questionnaires through personal interviewing from the individual respondent present in their own house on socio-economic conditions of goat keepers (age, education, occupation, land holding, source of capital, annual income, Purchasing ability, rearing purposes, etc.), goat holding size (types of goats, duration of rearing, etc.), production performances (birth weight, weaning weight, weaning age, slaughter age, milk production, etc.), reproductive status (age at puberty, first kidding, gestation period, kidding interval, availability of buck for mating, etc.), health care practices (incidence of diseases and health care, vaccination and de-worming, sources of medicine, disease occurrences etc.), and feeding system (sources of feed, availability of feeds, grazing of goats, etc.). Annual cost of production and income from goats, impact on income and livelihood improvement of farmers towards goat husbandry was also investigated.

2.2. Statistical analysis

All the collected data were cross checked before transferring to the excel sheets and coded, compiled, and analyzed to accomplish the objectives of the study. The data was analyzed with the help of SPSS-v-16 computer package program.

3. Results and Discussion

3.1. Socio-economic conditions of the goat farmers in Lauhajang upazila

The socio economic conditions of goat farmers are presented in Table 2. The findings revealed that the majority of the goat farmers were middle aged (30 to 40 years). Majority of the farmers live in tin shed and kutcha house and reared poultry along with goat. In the present study, education status of the farmers was mostly between primary to higher secondary level where only 7.0% of the respondents were found illiterate and there were 17.0% farmers who completed graduation level. In the study area, forty seven percent of the goat farmers were engaged with agriculture crop farming along with goat rearing and rests of them were engaged with other business, service, etc. They had a minimum (1 to 2 acres) or no land for cultivation. There were no farmers found who got training on goat rearing. The study showed that 60.0% of farmers used their own capital and almost 40.0% took loan from bank and/or NGO's loan to rear goats. Almost Sixty percent of the respondents belonged to medium income categories followed by high and low income categories. Similar findings were revealed by these findings are close to Mohan *et al*. (2012), Hossain *et al*. (2017) reported that the farmer's families were poorest of the poor and illiterate and they had a minimum or no land for cultivation. Rawat *et al*. (2015) stated that the respondents were engaged in different occupations and most of the respondents taken goat rearing as a secondary or side occupation for generating additional income for the family. Similar findings were observed by Prabu *et al*. (2011). Similar views were reported by Tanwar *et al*. (2008), Praveena *et al*. (2014) and Tudu and Roy (2015) stated that majority of the goat keepers were illiterate.

3.2. Goat holding size and duration of rearing

Goat holding size like types of goat and duration of rearing are presented in Table 3. The goat breeds of this area were mostly indigenous types. The highest numbers of goats found were Black Bengal (55.0%) followed by Crossbred (24.0%) and Jamnapari goat (21.0%). About half of the farmers kept their goats at least 1 year followed by 6 months and 2 years and rest of them kept goats more than 2 years mainly for meat purpose. As most of the farmers use goat as a secondary activity in rural household or essential source of small income for the poor. These results supported by the findings of Hossain *et al*. (2017) in Mymensingh district and Wadkar *et al*. (2009) reported that 37.5% of the goat rearers had small flock size followed by 35% had medium and 27.5% had large flock size of goats.

Table 1. Name of the district, upazila, unions, villages and number of respondents in the experimental areas.

District	Upazila	Unions	Villages	Number of respondents
Munshiganj	Lauhajang	Kanakshar	Mashadgaon Dhitpur Kahetara	35
		Bejgaon	Kurigaon Hat Vogdia Atigao	30
		Teutia	Baranawpara Ghordour Sundisha	35

Table 2. Socio economic conditions of goat farmers in the studied areas.

Parameters	Category	Percentage of respondents
Age	Young aged (<30)	25.0
	Middle aged (30-40)	65.0
	Old aged (>40)	10.0
	Total	**100.0**
Education	Illiterate	7.0
	Primary	48.0
	Below HSC	28.0
	Degree pass	17.0
	Total	**100.0**
Occupation	Goat rearing	22.0
	Agricultural crop farming	47.0
	Others	31.0
	Total	**100.0**
Land Holding (Land in acres)	1-2	43.0
	2-5	33.0
	Above 5	24.0
	Total	**100.0**
Source of Capital	Own Capital	60.0
	Loan from Bank or NGO's	40.0
	Total	**100.0**
Annual Income (Tk. in Lakh)	Low (below 1)	29.0
	Medium (1 to 4)	59.0
	High (above 4)	12.0
	Total	**100.0**

Table 3. Distribution of goat in selected areas of Lauhajang.

Parameters	Category	Percentage of respondents
Types of Goat	Black Bengal goat	55.0
	Jamnapari goat	21.0
	Crossbred goat	24.0
	Total	**100.0**
Rearing purposes	Meat	80.0
	Milk	20.0
	Skin	0.0
	Total	**100.0**
Duration of rearing	6 months	26.0
	1 year	46.0
	2 years	20.0
	Above 2 years	8.0
	Total	**100.0**
Purchasing ability (number of goats)	2-5	46.0
	5-10	40.0
	Above 10	14.0
	Total	**100.0**

Table 4. Productive and reproductive performances of goat in Lauhajang.

Parameters	Time/Period
Age at puberty or 1st heat (months)	7.4
Age at 1st Kidding (months)	14.5
Gestation period (months)	5.1
Sex Ratio (Doe:Buck)	25:1
Interval between kidding (months)	8.5
Average prolificacy	2.1
Post-partum heat period (days)	45.5
Birth weight (kg)	0.91
Weaning age (months)	4.0
Weaning weight (kg)	5.5
Slaughter age (months)	18.0
Market weight (kg)	16.5
Mortality rate (%)	20.0
Avg. milk production (Liter/day)	0.25

Table 5. Information about the availability of bucks for mating of the female goats.

Parameters	Category	Percentage of respondents
Availability of bucks for mating/service	Owned	46.0
	Hired	54.0
	Artificial Insemination	0.0
	Total	**100.0**

Table 6. Health care practices of goats in the studied areas.

Parameters	Category	Percentage of respondents
Diseases	Skin disease	61.0
	Peste des petits ruminant (PPR)	20.0
	Foot and mouth disease (FMD)	11.0
	Pneumonia	8.0
	Total	**100.0**
Vaccination and de-worming	Yes	10.0
	No	90.0
	Total	**100.0**
	De-worming	0.0
Source of Vaccine	Local Market	85.0
	Livestock office	15.0
	Total	**100.0**
Occurrences of disease	Rainy season	77.0
	Winter season	13.0
	Summer season	10.0
	Total	**100.0**

Table 7. Availability of feeds and feeding management of goats in the studied areas.

Parameters	Category	Percentage of respondents
Sources of Feed	Roadside and fellow land grass	70.0
	Cut and carry grass	11.0
	Tree leaves and other leaves	14.0
	Concentrates	5.0
	Total	**100.0**
Availability of Feeds	Available	81.0
	Not Available	19.0
	Total	**100.0**
Persons involved in grazing of the goats	Self	33.0
	Women and children	67.0
	Hired labor	0.0
	Total	**100.0**

3.3. Productive and reproductive performances of goat

The production performances like birth weight, weaning weight, weaning age, slaughter age, and milk production are presented in Table 4. Average birth weight, weaning weight, weaning and slaughter age of goats in selected areas were 0.91kg, 5.5kg, 4.0 and 18.0 months respectively. Hassan *et al*. (2007) and Chowdhury *et al*. (2002) reported that the average birth weight of kid were 1.60±.50 and 1.24 kg, respectively and which is significantly higher than the present findings in the selected areas which may be due to management, feeding and nutritional condition of the goats. Although kid mortality was affected by dam's weight at kidding, birth weight of kid, milk yield of dam, parity of kidding, season of birth, but pre-natal dam's nutrition found to be the most important factor. Benerjee (2004) observed that the average body weight of adult Black Bengal does was 14 to 20 kg, which is collaborate with the present findings.

The reproductive status of goats in the studied areas is presented in Table 4. The average age at 1st heat, gestation period, post-partum heat period, and kidding interval was 7.4 months, 5.1 months, 45.5 days, and 8.5 months, respectively. The average prolificacy (kids/kidding) in the selected area was 2.1 and the mortality rate 20.0% which is similar with the findings of Ali *et al*. (2016).

Availability of bucks for mating or service is presented in Table 5. Fifty four percent of respondents reported that their goats were mated by using a buck belonging to other farmers; the cost was Tk. 20-30 per mating which is supported by the findings of Jaitner *et al*. (2001).

3.4. Disease and health management of goats

In the experimental areas, diseases of goats is presented in Table 6 where the incidence of skin disease was found higher (61.0%) followed by peste des petits ruminant (PPR) (20.0%), foot and mouth diseases (FMD) (11.0%) and pneumonia (8.0%). Prevalence of PPR was found highest both for male and female goat. Occurrence of various infectious diseases was higher in rainy season (77.0%) followed by winter season and summer season. Majority of the farmers did not follow any vaccination and de-worming programme. But some of them purchased most of the vaccines and anthelmentics or medicines from the local market. This indicates that the goats of experimental areas were more susceptible to diseases and farmers had little knowledge on the causes of diseases like FMD, PPR, pneumonia, etc. This was due to lack of proper training of farmers on goat rearing. Hossain *et al*. (2017) reported that two major diseases of goat in experimental area were skin disease (73.3%) and PPR (26.7%) in Mymensingh district and Nath *et al*. (2014) reported the prevalence of PPR was highest in winter (13.38%) and lowest in summer (8.93%).

3.5. Feeds and feeding of goat

The availability of feeds and feeding practices of goats are presented in Table 7. The farmers fed their goats with locally available roughages and tree leaves in the selected areas. The study showed that most of the respondents (70.0%) were fully dependent on roadside and fellow land grasses and rests of the respondents were used cut and carry grasses (fodder, water hyacinth, tree leaves, helencha, etc). Small numbers of the respondents (5.0%) were found to supply small quantity of concentrates to their goats. More than 80.0% farmers reported that local feeds are available in the selected areas. The results showed that younger household member especially young women and children (67.0%) are more likely to own and raise small ruminants. They mainly grazed their goats on communal lands, irrigation banks, roadsides and within the villages in the experimental

areas. The findings of Dossa *et al*. (2008) partially matched with present findings where they reported women as majority of the goat owners.

4. Conclusions

From the above study, it may be concluded that goat farmers need knowledge regarding the scientific feeding and breeding management. On the other hand, farmers should be more cordial to adopt new technologies for gear up goat production in the current community.

Conflict of interest

None to declare.

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