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Livestock rearing practices among the tribal farmers of Lakhimpur and Dhemaji district of Assam

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Abstract

The present study was undertaken in two purposively selected districts of Assam namely Lakhimpur and Dhemaji from North bank plan agro-climatic zone. The area was purposively selected based on criteria like high prevalence of traditional practices among farmers in livestock and animal husbandry rearing practices, tribal domination and high cultural and ritualistic values among the people of both the districts. From each districts, four numbers of developmental blocks (two development blocks from each district) were considered as the location for the current research work. From each Block 5 villages were selected for the study making the total number of villages 20. Finally, from each village 20 farmers were considered as respondents making the total sample size 400. Only those farmers having at least 2-3 numbers of livestock and few poultry birds in their backyard was considered to be a part of the sample. Based on this criterion the farmers were selected applying snow ball sampling technique. Most of the farmers have been rearing their livestock and poultry in traditional system except in piggery where a few farmers had taken up intensive system of farming in the study area. In buffalo farming cent per cent in Lakhimpur and Dhemaji district followed "*khuti*" system or scavenging system of rearing. Cattle, buffalo and goat were allowed for open grazing in both the district ans similarly poultry birds were reared in backyard system for which there was no use feeding trough for feeding purpose in both the districts. Whereas in pig farming, although pigs were reared in scavenging and tethering system the farmers provided feed daily at regular time intervals. Only 6.12 per cent of the repondents practised artificial insemination and rest preferred natural breeding. Majority of the farmers were not aware of the biosecurity measures to be adopted in thier farms with only 9.96 per cent piggery farmers constructing boundary walls in thier farms.

Keywords: Livestock reaing practices, tribal farmers, *Khuti* system, biosecurity

Introduction

North eastern (NE) parts of India have tremendous scope in livestock and poultry farming as majority of people are meat eater and there are very less or no social taboos associated with meat consumption. The ethnic people of NE India have been practicing livestock and poultry farming since time immemorial for a livelihood and as part of their tradition & culture. Assam is the largest state of NE India and gateway to North Easter region. The total geographical area of Assam is 78,438 sq.km and is extending from 22°19' to 28°16' North Latitude and 89°42' to 96°30' East Longitude. Assam is the highest populated state of NE India with 3,12,05,443 population, out of which 2,68,07,034 are residing in rural areas and 38,84,371 belong to scheduled tribe (Statistical Handbook of Assam). The major tribal people of Assam are Boro, Mishing, Karbi, Dimasa, Kachari, Sonowal, Tiwa, Rabha, Hajong etc. Total livestock and poultry population of Assam is 2,72,16170 number (Statistical Handbook of Assam). Livestock production in Assam is still in the hands of small and marginal farms with weak economic status. But, in recent years many farmers have oriented their activities related to their enterprise into commercial and scientific farming systems. Improved livestock breeds and poultry strains are now been reared by a section of specialized, progressive and commercialized farmers even though very few in number. In recent years, the farmers have witnessed many outbreaks of new and emerging diseases which became more serious due to the traditional non-conventional system of rearing. Interventions for scientific management of farms to control disease outbreaks and adoption of new marketing means to fetch remunerative prices for farmers for their produce without disturbing the cultural ecosystem is the need of the hour. The current study was conducted in two selected districts namely Lakhimpur and Dhemaji of the state. Lakhimpur district lies approximately between 26º48' and 27º53' Northern latitude and 93º42' and 94º20' East longitude. Dhemaji district is geographically situated

between the 94^0 12' 18" E and $95^0$41' 32" E longitudes and 27^0 05' 27" N and 27^0 57' 16" N latitudes. Flood is one of the most important reasons for these districts to be less developed as compared to other districts of Assam. Each and every year there is loss of agricultural crops and livestock due to recurrent flood. Industrial development is also less in these districts as compared to other parts of Assam. As a result, migration of youth, both educated and illiterate, to metro cities like Bangalore, Mumbai, Chennai etc.,has become a trend now a days for income generation. In order to retain youth in Agriculture, equipping them with scientific ways of rearing & management is a must to make them remunerative and help them to have sustainable livelihood. Major occupation of these two districts is related to agriculture and allied sectors. However, the farming systems are low input and low output type. The most common way of livestock rearing includes tethering, scavenging and semi-intensive system with locally available materials. Most common livestock and poultry husbandry practices in Assam are cattle, goat, pig, chicken, duck, buffalo etc. Most of the farmers adopt some traditional practices for feeding, management and treatment of their livestock. The schedule tribe population is higher in the districts under current study and comprises of ST population of 23.90 percent in Lakhimpur district and 47.50 in Dhemaji (Population census 2011) [1]. Most of the schedule tribe population in these districts are residing in rural areas and affected by flood every year. The tribal population are mostly relying on agricultural sectors including livestock and poultry for their livelihood. In this backdrop a study was conducted on the Livestock rearing practices among the tribal farmers of Lakhimpur and Dhemaji district of Assam

Material and Methods:

The current research work was conducted in two districts of Assam namely Lakhimpur and Dhemaji from North bank plan agro-climatic zone. The area was purposively selected based on criteria like high prevalence of traditional practices among farmers in livestock and animal husbandry rearing practices, tribal domination and high cultural and ritualistic values among the people of both the districts. From the two districts of Lakhimpur and Dhemaji, two development Blocks each from the two districts were considered as the location for the current research work. The selected blocks were Ghilamora and Telahi development block from Lakhimpur district and Sisiborgaon and Bordoloni development blocks from Dhemaji district. These Blocks were selected purposively going by the fact that these blocks has more livestock population and more tribal population. From each Block 5 villages were selected for the study making the total number of villages 20. Finally from each village 20 farmers were considered as respondents making the total sample size 400. Only those farmers having at least 2-3 numbers of livestock and few poultry birds in their backyard was considered to be a part of the sample. Based on this criterion the farmers were selected applying snow ball sampling technique. The data were personally collected with the help of an structured interview schedule from Sptember 2022 to January 2024. The collected data from the respondents were analysed using suitable statistical tools.

Result and Discussion

1. Housing management

Most of the farmers have been rearing their livestock and poultry in traditional system except in piggery where a few farmers had taken up intensive system of farming in the study area. Table 1 depicted that 96.24 per cent of respondents reared their cattle in scavenging and tethering system, 3.76 per cent reared in only tethering system in Lakhimpur district, 83.16 per cent in Dhemaji ditrict reared their cattle in scavenging and tethering system of rearing followed by only 16.84 per cent on tethering system. In pooled data it was found that 89.63 per cent reared their cattle in tethering and scavenging system of rearing and 10.37 per cent reared in tethering system only. It was observed that in the study area most of the farmers followed monocropping, so after harvesting the farmers reared cattle in scavenging system and during cultivation time they preferred to go for tethering system to protect their crops. In buffalo farming 100 per cent in Lakhimpur and Dhemaji district followed "*khuti*" syatem or scavenging system of rearing. They provide only salt at the evening or morning time and followed open grazing system, specially in "*chapor*i" areas. Majority (80.78%) of the respondent in Lakhimpur, Dhemaji followed tethering system for pig. Only 9.25 per cent of the farmers practised both scavenging and tethering system of rearing pigs. Due to outbreak of African Swine Fever the farmers are very much concerned about pig farming as they had witnessed huge economic losses in the last few years. However Intensive system of rearing of pigs, was followed by only 9.96 per cent of the respondents.

In goat farming both scavenging and tethering systems were followed by majority (77.91%) of farmers in Lakhimpur and Dhemaji district followed by 22.09 per cent practised tethering method of rearing their goats. 100.00 per cent of farmers reared their poultry in backyard in both the districts in a zero input system. Except in pig farming, majority of the respondents were rearing their livestock on mud floor but in piggery 21.35 per cent of the repondents constructed concrete floor. In goat and poultry, the farmers followed scavenging system and provided shelter constructed with locally available material like bamboo and wooden as shown in Table 1.

Roofing material used in different livestock and poultry farming as shown in Table 1 revealed that 100.00 per cent of goat, pig and poultry farmers used GI sheet as roofing material. In cattle rearing, it was found that 2.69 per cent of respondents of Lakhimpur district and 3.16 per cent of Dhemaji district were rearing their cattle in sheds with covering as roofing material of thatch or leaves. But it was costly as the thatch or leaf needed to be replaced at frequent interval. Buffaloes were reared in "*Khuti"* system so no roofing material and side wall were needed. Majority (93.79%) of the respondents of Lakhimpur district used bamboo material for side wall followed by 6.21 per cent using woods in goat rearing. In Dhemaji 59.79 per cent used bamboo as side wall and 40.20 per cent used wooden side wall. In pooled data it was seen that 81.01 per cent used bamboo as side wall material and 18.99 per cent used wood as side wall material in goat rearing. In poultry farming it was evident that 100.00 per cent of the respondents in Lakhimpur, Dhemaji and Pooled data used either bamboo or

wooden materials for side wall as traditional system of rearing.

It could be generalized from the table that traditional system of rearing is practiced in cattle, buffalo, goat, poultry rearing with animal sheds constructed with locally available material. Only a few numbers of pig farmers followed scientific housing system with concrete floor and side wall etc. Similar findings were reported by Bora (2018) [4] and Gogoi (2018) [6] among the buffalo farmers rearing their animals in khuti system in North bank plain zone. On other hand Rahman *et al.* (2019), [8] Sahu and Gupta (2024) [9] reported either intensive or semi intensive system of rearing wilt GI sheet and concrete wall.

Table 1: Frequency distribution of respondents on the basis their housing management of livestock and poultry

Species of animal	Particulars	Lakhimpur	Dhemaji	Pooled
System of rearing				
Cattle	Scavenging and tethering	179(96.24)	158(83.16)	337(89.63)
	Tethering only	7(3.76)	32(16.84)	39(10.37)
	Semi-intensive	0(0.00)	0(0.00)	0(0.00)
	Intensive	0(0.00)	0(0.00)	0(0.00)
	IFS	0(0.00)	0(0.00)	0(0.00)
Buffalo	Scavenging	32(100.00)	5(100.00)	37(100.00)
	Tethering	0(0.00)	0(0.00)	0(0.00)
	Semi-intensive	0(0.00)	0(0.00)	0(0.00)
	Intensive	0(0.00)	0(0.00)	0(0.00)
	IFS	0(0.00)	0(0.00)	0(0.00)
Pig	Scavenging and tethering	18(12.33)	8(5.93)	26(9.25)
	Tethering only	121(82.88)	106(78.52)	227(80.78)
	Semi-intensive	0(0.00)	0(0.00)	0(0.00)
	Intensive	7(4.79)	21(15.55)	28(9.96)
	IFS	0(0.00)	0(0.00)	0(0.00)
Goat	Scavenging and tethering	153(95.03)	48(49.48)	201(77.91)
	Tethering only	8(4.97)	49(50.52)	57(22.09)
	Semi-intensive	0(0.00)	0(0.00)	0(0.00)
	Intensive	0(0.00)	0(0.00)	0(0.00)
	IFS	0(0.00)	0(0.00)	0(0.00)
Poultry	Backyard	189(100.00)	195(100.00)	384(100.00)
	Tethering	0(0.00)	0(0.00)	0(0.00)
	Semi-intensive	0(0.00)	0(0.00)	0(0.00)
	Intensive	0(0.00)	0(0.00)	0(0.00)
	IFS	0(0.00)	0(0.00)	0(0.00)
Floor material				
Cattle	Mud	186(100.00)	190(100.00)	376(100.00)
	Sawdust/Rice husk etc	0(0.00)	0(0.00)	0(0.00)
	Bamboo/wooden	0(0.00)	0(0.00)	0(0.00)
	Concrete/ Pucca	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Buffalo	Mud	32(100.00)	5(100.00)	37(100.00)
	Sawdust/Rice husk etc	0(0.00)	0(0.00)	0(0.00)
	Bamboo/wooden	0(0.00)	0(0.00)	0(0.00)
	Concrete/ Pucca	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Pig	Mud	133(91.10)	88(65.19)	221(78.65)
	Sawdust/Rice husk etc	0(0.00)	0(0.00)	0(0.00)
	Bamboo/wooden	0(0.00)	0(0.00)	0(0.00)
	Concrete/ Pucca	13(8.90)	47(34.81)	60(21.35)
	Any other	0(0.00)	0(0.00)	0(0.00)
Goat	Mud	121(75.16)	90(92.78)	211(81.78)
	Sawdust/Rice husk etc	0(0.00)	0(0.00)	0(0.00)
	Bamboo/wooden	40(24.84)	7(7.22)	47(18.22)
	Concrete/ Pucca	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Poultry	Mud	0(0.00)	11(5.64)	11(2.86)
	Sawdust/Rice husk etc	0(0.00)	0(0.00)	0(0.00)
	Bamboo/wooden	189(100.00)	184(94.36)	373(97.14)
	Concrete/ Pucca	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Roofing material				
Cattle	GI Sheet	181(97.31)	184(96.84)	365(97.07)
	Thatch/leaf	5(2.69)	6(3.16)	11(2.93)
	Plastic sheet	0(0.00)	0(0.00)	0(0.00)

	Bamboo	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Buffalo	GI Sheet	0(0.00)	0(0.00)	0(0.00)
	Thatch/leaf	0(0.00)	0(0.00)	0(0.00)
	Plastic sheet	0(0.00)	0(0.00)	0(0.00)
	Bamboo	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Pig	GI Sheet	146(100.00)	135(100.00)	281(100.00)
	Thatch/leaf	0(0.00)	0(0.00)	0(0.00)
	Plastic sheet	0(0.00)	0(0.00)	0(0.00)
	Bamboo	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Goat	GI Sheet	161(100.00)	97(100.00)	258(100.00)
	Thatch/leaf	0(0.00)	0(0.00)	0(0.00)
	Plastic sheet	0(0.00)	0(0.00)	0(0.00)
	Bamboo	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Poultry	GI Sheet	189(100.00)	195(100.00)	384(100.00)
	Thatch/leaf	0(0.00)	0(0.00)	0(0.00)
	Plastic sheet	0(0.00)	0(0.00)	0(0.00)
	Bamboo	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Side wall				
Cattle	Wooden	0(0.00)	0(0.00)	0(0.00)
	bamboo	186(100.00)	190(100.00)	376(100.00)
	Stone/concrete	0(0.00)	0(0.00)	0(0.00)
	Wire net	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Buffalo	Wooden	0(0.00)	0(0.00)	0(0.00)
	bamboo	0(0.00)	0(0.00)	0(0.00)
	Stone/concrete	0(0.00)	0(0.00)	0(0.00)
	Wire net	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Pig	Wooden	0(0.00)	2(1.48)	2(0.71)
	bamboo	139(95.21)	112(82.97)	251(89.32)
	Stone/concrete	7(4.79)	21(15.55)	28(9.97)
	Wire net	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Goat	Wooden	10(6.21)	39(40.21)	49(18.99)
	bamboo	151(93.79)	58(59.79)	209(81.01)
	Stone/concrete	0(0.00)	0(0.00)	0(0.00)
	Wire net	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Poultry	Wooden	0(0.00)	0(0.00)	0(0.00)
	Bamboo/Bambo	189(100.00)	195(100.00)	384(100.00)
	Stone/concrete	0(0.00)	0(0.00)	0(0.00)
	Wire net	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)

Note: Figure within parentheses indicate percentage

2. Feeding management

Feeding is one of the most important factors in livestock and poultry farming. Table 2 depicted that cattle, buffalo and goat were allowed for open grazing in both the district for which there was no use of feeding trough for the purpose of feeding thier animals. Similarly, since poultry birds were mostly reared in backyard system in the study area so there was no feeding trough for providing feeds to the poultry birds in both the districts. But in pig farming, though pigs were reared in scavenging and tethering system the farmers provided feed daily at regular time intervals. Aluminium or metal made feeding troughs were used to feed pigs in the study district. Non-conventional feeding system have been followed for feeding of cattle, buffalo, goat and poultry. Cent per cent of the respondents in both the districts provided non -conventional feed for cattle, buffalo, goat and poultry. Majority (76.71%) of the respondents of pig farmer fed both conventional and non-conventional feed to their pigs and 23.29 per cent fed only nonconventional feed in Lakhimpur districts. The pig farmers from Dhemaji district also followed the same trend where majority (82.22%) provided both conventional and nonconventional feed and 17.78 per cent fed only non-conventional feed. Open grazing system was followed in both the districts in cattle, buffalo and goat faring. Backyard system was followed in poultry so no extra feed was provided. Pigs were reared in both tethering and scavenging system but fed thrice a day. Similar findings were reported by Rahman *et al.* (2019) [8] and Bora (2018) [4]. Contradictory finding were reported by Sun (2021) [14], Saurav *et al.* (2023) [10] and Barman *et al.* (2023) [3] who were found the feeding was either stall-fed or feeding with scientific feed.

Table 2: Frequency distribution of respondents on the basis their feeding management of livestock and poultry

Species of animal	Particulars	Lakhimpur	Dhemaji	Pooled
Material used in feeding trough				
Cattle	Wooden	0(0.00)	0(0.00)	0(0.00)
	Plastic made	0(0.00)	0(0.00)	0(0.00)
	Aluminium/metal made	0(0.00)	0(0.00)	0(0.00)
	Open floor	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Buffalo	Wooden	0(0.00)	0(0.00)	0(0.00)
	Plastic made	0(0.00)	0(0.00)	0(0.00)
	Aluminium/metal made	0(0.00)	0(0.00)	0(0.00)
	Open floor	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Pig	Wooden	0(0.00)	0(0.00)	0(0.00)
	Plastic made	0(0.00)	0(0.00)	0(0.00)
	Aluminium/metal made	146(100.00)	135(100.00)	281(100.00)
	Open floor	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Goat	Wooden	0(0.00)	0(0.00)	0(0.00)
	Plastic made	0(0.00)	0(0.00)	0(0.00)
	Aluminium/metal made	0(0.00)	0(0.00)	0(0.00)
	Open floor	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Poultry	Wooden	0(0.00)	0(0.00)	0(0.00)
	Plastic made	0(0.00)	0(0.00)	0(0.00)
	Aluminium/metal made	0(0.00)	0(0.00)	0(0.00)
	Open floor	0(0.00)	0(0.00)	0(0.00)
	Any other	0(0.00)	0(0.00)	0(0.00)
Type of feed				
Cattle	Non-conventional	186(100.00%)	190(100.00)	376(100.00)
	Conventional	0(0.00)	0(0.00)	0(0.00)
	Both	0(0.00)	0(0.00)	0(0.00)
Buffalo	Non-conventional	32(100.00)	5(100.00)	37(100.00)
	Conventional	0(0.00)	0(0.00)	0(0.00)
	Both	0(0.00)	0(0.00)	0(0.00)
Pig	Non-conventional	34(23.29)	24(17.78)	58(20.64)
	Conventional	0(0.00)	0(0.00)	0(0.00)
	Both	112(76.71)	111(82.22)	223(79.36)
Goat	Non-conventional	161(100.00)	97(100.00)	258(100.00)
	Conventional	0(0.00)	0(0.00)	0(0.00)
	Both	0(0.00)	0(0.00)	0(0.00)
Poultry	Non-conventional	189(100.00)	195(100.00)	384(100.00)
	Conventional	0(0.00)	0(0.00)	0(0.00)
	Both	0(0.00)	0(0.00)	0(0.00)
Frequency of feeding				
Cattle	Whole day	186(100.00)	190(100.00)	376(100.00)
	Twice daily	0(0.00)	0(0.00)	0(0.00)
	Thrice a day	0(0.00)	0(0.00)	0(0.00)
Buffalo	Whole day	32(100.00)	5(100.00)	37(100.00)
	Twice daily	0(0.00)	0(0.00)	0(0.00)
	Thrice a day	0(0.00)	0(0.00)	0(0.00)
Pig	Whole day	0(0.00)	0(0.00)	0(0.00)
	Twice daily	0(0.00)	0(0.00)	0(0.00)
	Thrice a day	146(100.00)	135(100.00)	281(100.00)
Goat	Whole day	161(100.00)	97(100.00)	258(100.00)
	Twice daily	0(0.00)	0(0.00)	0(0.00)
	Thrice a day	0(0.00)	0(0.00)	0(0.00)
Poultry	Whole day	189(100.00)	195(100.00)	384(100.00)
	Twice daily	0(0.00)	0(0.00)	0(0.00)
	Thrice a day	0(0.00)	0(0.00)	0(0.00)

Note: Figure within parentheses indicate percentage

3. Breeding management

Table 3 revealed that 100 per cent farmers reared indigenous breeds of buffalo and goat namely Luit buffalo and Assam hill goat. The farmers reared indigenous/cross bred cattle and pig in both the districts of the study area. Majority (88.89%) of the farmers reared indigenous/crossbred poultry and 9.11 per cent reared backyard poultry like Kamrupa, Vanaraja etc.in Lakhimpur, Dhemaji district. Except cattle, all the farmers practiced natural breeding system. Only 6.45 per cent respondent of Lakhimpur district and 5.79 percent in Dhemaji district adopted artificial insemination and natural breeding system. Similar findings were reported by Bora (2018) [4], Sreedhar *et al.* (2017) [13], Zaw Win *et al.* (2018) [15] and Rahman *et al.* (2019) [8].

Table 3: Frequency distribution of respondents on the basis their breeding management of livestock and poultry

Species of animal	Particulars	Lakhimpur	Dhemaji	Pooled
Type of livestock and poultry				
Cattle	Indigenous/ crossbred	186(100)	190(100.00)	376(100.00)
	Exotic	0(0.00)	0(0.00)	0(0.00)
	New strain/line	0(0.00)	0(0.00)	0(0.00)
Buffalo	Indigenous/crossbred	32(100.00)	5(100.00)	37(100.00)
	Exotic	0(0.00)	0(0.00)	0(0.00)
	New strain/line	0(0.00)	0(0.00)	0(0.00)
Pig	Indigenous/Crossbred	146(100.00)	135(100.00)	281(100.00)
	Exotic	0(0.00)	0(0.00)	0(0.00)
	New strain/line	0(0.00)	0(0.00)	0(0.00)
	Backyard poultry	0(0.00)	0(0.00)	0(0.00)
Goat	Indigenous/crossbred	161(100.00)	97(100.00)	258(100.00)
	Exotic	0(0.00)	0(0.00)	0(0.00)
	New strain/line	0(0.00)	0(0.00)	0(0.00)
Poultry	Indigenous/Crossbred	168(88.89)	181(92.82)	349(90.89)
	New strain/line	0(0.00)	0(0.00)	0(0.00)
	Backyard poultry	21(11.11)	14(7.18)	35(9.11)
Breeding practice adopted				
Cattle	AI	0(0.00)	0(0.00)	0(0.00)
	Natural	174(93.55)	179(94.21)	353(93.88)
	AI & Natural	12(6.45)	11(5.79)	23(6.12)
Buffalo	AI	0(0.00)	0(0.00)	0(0.00)
	Natural	32(100.00)	5(100.00)	37(100.00)
	AI & Natural	0(0.00)	0(0.00)	0(0.00)
Pig	AI	0(0.00)	0(0.00)	0(0.00)
	Natural	146(100.00)	135(100.00)	281(100.00)
	AI & Natural	0(0.00)	0(0.00)	0(0.00)
Goat	AI	0(0.00)	0(0.00)	0(0.00)
	Natural	161(100.00)	97(100.00)	258(100.00)
	AI & Natural	0(0.00)	0(0.00)	0(0.00)
Poultry	AI	0(0.00)	0(0.00)	0(0.00)
	Natural	189(100.00)	195(100.00)	384(100.00)
	AI & Natural	0(0.00)	0(0.00)	0(0.00)

Note: Figure within parentheses indicate percentage

4. Biosecurity measures

It was interesting to note from Table 5 that the respondents were not much aware of biosecurity measures to be maintained in their farms. In both the districts under study it was noted that measures like construction of boundary wall, restriction on entry of visitors inside the farms were not at all taken up except few pig farmers. Even though good proportion of respondents got their livestock vaccinated & dewormed but it was done as a means of regular healthcare since parasitic infestation is very common in the study area. The percentage of pig farmers constructing boundary walls was quite negligible with only 9.96 per cent in pooled data. This might be a positive indication that the recent diseases outbreaks in pigs, particularly ASF, has created awareness among pig farmers to change their traditional ways and tackle such disasters with modern scientific way of rearing livestock and poultry. Similar findings were reported by Singh *et al.* (2016) [11], Prajapati *et al.* (2015) [7], Singh *et al.* (2023) [12], Bora (2018) [4], Zaw Win *et al.* (2018) [15]. Contradictory findings were reported by Sun (2021) [14], Dhaka *et al.* (2023) and Boruah *et al.* (2020) [5] where they had found that the farmers either had strict biosecurity or adopted fencing as biosecurity measures.

Table 4: Frequency distribution of respondents on the basis their biosecurity measures of livestock and poultry

Species of animal	Biosecurity measures	Lakhimpur	Dhemaji	Pooled
Cattle	Fencing/Boundary wall, vaccination, and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination and Deworming	173(93.01)	147(77.37)	320(85.11)
	Vaccination only	13(6.99)	43(22.63)	56(14.89)
	Deworming only	0(0.00)	0(0.00)	0(0.00)
	Any other (restriction of visitors' entry etc.,)	0(0.00)	0(0.00)	0(0.00)
Buffalo	Fencing/Boundary wall, vaccination, and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination only	0(0.00)	0(0.00)	0(0.00)
	Deworming only	32(100.00)	7(100.00)	37(100.00)
	Any other (restriction of visitors' entry etc.,)	0(0.00)	0(0.00)	0(0.00)
Pig	Fencing/Boundary wall, vaccination, and Deworming	7(4.79)	21(15.56)	28(9.96)
	Vaccination and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination only	0(0.00)	0(0.00)	0(0.00)
	Deworming only	135(92.47)	108(80.00)	243(86.48)
	Any other (restriction of visitios' entry etc.,)	0(0.00)	0(0.00)	0(0.00)
Goat	Fencing/Boundary wall, vaccination, and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination and Deworming	6(3.73)	10(10.31)	16(6.20)
	Vaccination only	0(0.00)	0(0.00)	0(0.00)
	Deworming only	155(96.27)	87(89.70)	242(93.80)
	Any other (restriction of visitors' entry etc.,)	0(0.00)	0(0.00)	0(0.00)
Poultry	Fencing/Boundary wall, vaccination, and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination and Deworming	0(0.00)	0(0.00)	0(0.00)
	Vaccination only	11(5.82)	13(6.67)	24(6.25)
	Deworming only	0(0.00)	0(0.00)	0(0.00)
	Any other (restriction of visitors' entry etc.,)	0(0.00)	0(0.00)	0(0.00)

Note: Figure within parentheses indicate percentage

Conclusion

The livestock and poultry rearing of Lakhimpur and Dhemaji district of Assam is still in the hands of small and marginal farmers with low input and low output system. Scientific rearing of livestock and poultry is not practised by majority of the farmers except in piggery where only a few numbers of farmers are practicing intensive system of rearing. With respect to feeding, breeding and healthcare management practices a few aspects of scientific livestock farming were practised by the farmers. Livestock and poultry farming is an integral part among the tribal farmers of the area for which proper awareness and handholding with financial support by the Government and Non-Government agencies can help the farmers to adopt scientific livestock framing practices which could help the farmers is boosting their economic condition. Out migration of educated youth for livelihood is one of the important issues in the study area which can be solved by encouraging them to take up scientific livestock farming as a means of income generation. Outbreak of different diseases in livestock and poultry every year leads to huge economic losses among the farmers which can be reduced by creating awarness regarding biosecurity measures to be adopted as majority of the farmers were unaware or not following the essential biosecurity protocol in their farms.

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References

1. Anonymous. Population census. Govt. of India; 2011.
2. Anonymous. Statistical handbook of Assam; 2023.
3. Barman B, Mohammad A, Girish CE, Kisku U, Lepcha CY, Yadav P. Assessment of the existing feeding and housing management practices of dairy animals in Rajbanshi dairy farmers. Int J Environ Clim Change. 2023;13(12):513-521. https://doi.org/10.9734/ijecc/2023/v13i123708.
4. Bora L. Livestock rearing and livelihood security in flood affected areas of Assam. PhD thesis, Assam Agricultural University, Jorhat; 2018.
5. Boruah K, Khuman LS, Khargharia S, Payeng S, Johari M, Bordoloi G, *et al*. Shelter management practices of goat by the farmers of Lakhimpur and Dhemaji district of Assam. Int J Chem Stud. 2020;8(5):105-108.
6. Gogoi D. Future mining of buffalo rearing practices under traditional "Khuti" system in North Bank Plan Zone. MVSc thesis, Assam Agricultural University; 2018.
7. Prajapati VS, Singh RR, Kharadi VB, Chaudhary SS. Status of breeding and health care management practices of dairy bovines in the rural and urban areas of South Gujarat, India. J Anim Sci Adv. 2015;5(11):1514-1521.
8. Rahman SMR, Islam MN, Rashid MH, Siddiki MSR, Islam MA. Dairy buffalo production system under semi-intensive management in the coastal area of Bangladesh. SAARC J Agric. 2019;16(2):43-59. https://doi.org/10.3329/sja.v16i2.40257.
9. Sahu K, Gupta SK. Status of pig rearing practices in the urban districts of Uttarakhand. Indian J Anim Prod Manag. 2024;40(2):100-106. https://doi.org/10.48165/ijapm.2024.40.2.6.
10. Saurav S, Chakravarty R, Yadav P, Pandey S, Mishra S, Chandran V. Feeding and housing management

practices of dairy animals followed by dairy farmers of North Bihar. Biol Forum. 2023;15(1):69-74. https://doi.org/10.5281/zenodo.7568315.
11. Singh M, Chakravarty R, Singh K, Wani SA. Animal health care and management practices followed by tribal dairy farmers in Ranchi. Indian J Dairy Sci. 2016;69(1):105-111.
12. Singh M, Pongenere N, Mollier RT, Patton RN, Yadav R, Katiyar R, *et al*. Participatory assessment of management and biosecurity practices of smallholder pig farms in North East India. Front Vet Sci. 2023;10:1196955. https://doi.org/10.3389/fvets.2023.1196955.
13. Sreedhar S, Nagarjuna Reddy A, Sudhakar BV, Ramesh Babu P. Housing and other managemental practices adopted by different categories of dairy farmers in Kadapa district of Andhra Pradesh. Int J Livest Res. 2017;7:192-199.
14. Sun DT. Adoption level in scientific poultry rearing practices in Ri-Bhoi district of Meghalaya. MVSc thesis, Assam Agricultural University, Jorhat, Assam, India; 2021.
15. Zaw Win TT, Campbell A, Soares Magalhães RJ, Oo KN, Henning J. Characteristics of livestock husbandry and management practices in the Central Dry Zone of Myanmar. Trop Anim Health Prod. 2018;51(3):643-654. https://doi.org/10.1007/s11250-018-1738-9.