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Livestock and fodder production scenario of Tripura: An overview

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Abstract

Livestock farming forms an integral part in the economy of India and its various constituent states including Tripura. Tripura is the third-smallest state in the country with an area of 10,491.69 sq. km and is a landlocked hilly state in north-eastern region bordering Bangladesh on its three sides. The state is situated between 22°56' and 24°32' N latitudes and between 90°09' E and 92°20' E longitudes with an average annual rainfall of 2100 mm. The ICAR has categorized Tripura under the Agro-climatic zone of Humid Eastern Himalayan Region. The state has a typical monsoon climate that ranges from sub-tropical in the plains to temperate conditions in hilly areas. Agriculture is the backbone of Tripura's economy that provides employment to nearly 51 per cent of the total work force in the State. Livestock sector is an important part of agricultural system in the state because only about 27% of the total geographical area is available for cultivation and rest 60% is high land. In the recent scenario, there has been in vogue an interest among women and educated youths adopting integrated farming systems (IFS) in the state. Integrated farming systems are a sustainable alternative to commercial farming systems especially on marginal lands as they help in reversing resource degradation and stabilize farm incomes.

Keywords: Fodder, genetics, livestock, north east India, Tripura

Introduction

Tripura ranks third in the total livestock population among the north-eastern states of India with 1.31 million livestock and 4.16 million poultry population ^[1]. Livestock sector forms an integral part of the economy of the Tripura state. Livestock in the state is mainly livelihood oriented and generally owned by small and marginal farmers and landless agricultural laborers. Production of livestock and poultry products such as milk, meat and eggs has been a subsidiary occupation of the farmers in the State ^[2]. The livestock statistics of the state shown in Table no. 1 that there is a decline in all major livestock species except sheep, horses & ponies over the previous census.

Table 1: Percent change of recent livestock population of Tripura ^[1, 3]

Species	19 th Census	20 th Census	% Change over the previous census
Cattle	948794	739031	-22.10
Buffalo	10806	7131	-34.00
Goat	610922	360204	-41.03
Sheep	3110	5460	75.56
Pig	362534	206035	-43.16
Horses & Ponies	12	17	41.66
Poultry	4272733	4168246	-2.44

Animal genetic resources

To date, Tripura has only two registered breeds of livestock and poultry. Mali (pig) and Chittagong (chicken) are the breeds that have been registered by the National Breed Registration Agency i.e., ICAR-National Bureau of Animal Genetic Resources, Karnal.

Mali

Mali, a newly registered breed of pig is black in colour and has medium to small ubiquitously distributed bristles. Mali pigs have characteristic erect ears, concave snout, compact body with short legs and appears pot-bellied. The average body weight in male is 68 kg in males and 71 kg in females ^[4].

Mali pig attains puberty at 138.3±6.4 days in males and 117.9±1.5 days in females with an average litter size of 8.6±0.4 (n=30) at birth [5]. The average age at farrowing is

about 10.4 months [4]. Mali pigs are preferred for slaughtering as rituals by the local community i.e., Tripuris. The estimated population of Mali pig is 45,000 [3].

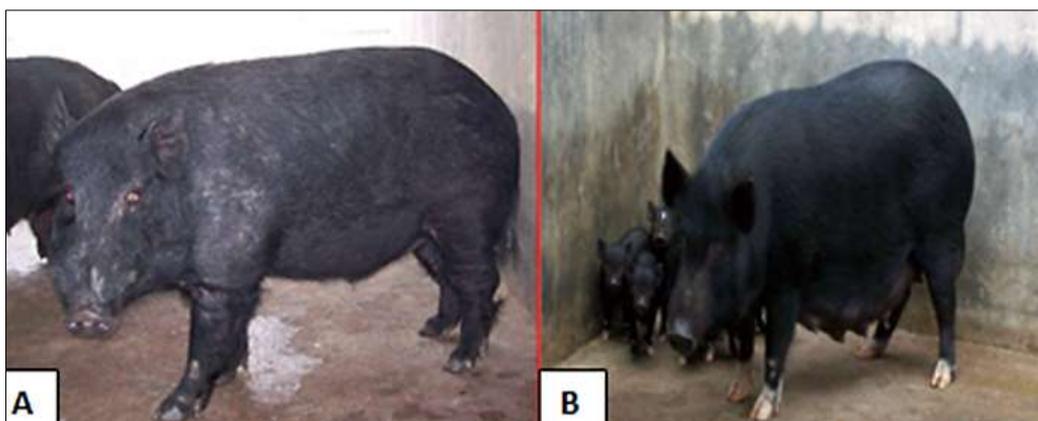


Fig 1: Mali pig (A: Male, B: Female) [4]

Chittagong

Chittagong, a registered breed of chicken, also known as ‘Malay’ is a native of Tripura but is also found in the neighboring state of Meghalaya. It is a dual-purpose bird reared in the rural areas for income generation and is also very popular for its mothering ability. The average body weight of cock and hen ranges from 3.5 – 4.5 kg and 3 - 4 kg respectively [6]. The number of eggs laid in one laying cycle reaches up to 12-14 eggs. Birds are very strong and hardy with maximum disease resistant.

Besides these two registered breeds, there are several local and non-descript breeds of cattle and goat. Black Bengal Goat which is considered to give the best quality chevon in the country is widely found throughout Tripura although it being registered with West Bengal as its native tract. Non-descript local cattle mainly form the cattle population of Tripura. With various crossbreeding schemes of the government and availability of semen, now crossbred Jersey cattle population is slowly on the rise.

Major constraints

The state with minimum total land area have experience various constraints for livestock production in a scientific manner. Such drawbacks are-

1. No superior germplasm
2. Shortage of feeds and fodder
3. Lack of interest by educated youths to adopt dairy farming
4. Lack of government intervention in encouraging livestock farming
5. Lack of extension workers to perform AI
6. No technical knowledge about cultivation of fodders
7. Land area is limited

Livestock schemes

Various livestock schemes have been implemented by the state Animal Resources Development Department for upliftment of economically weaker section and unemployed youth of the state. The flagship schemes during the recent financial years includes distribution of Sirohi and Black Bengal breed for goat rearing, breeding and distribution of crossbred/exotic piglets amongst indigenous farmers, financial assistance for poultry rearing under National Livestock Mission (NLM) and Rashtriya Krishi Vikas Yojana

(RKVY). To ensure generation of more clean milk and employment interested entrepreneurs and farmers are being provided loan under Dairy Entrepreneurship Development Scheme [7]. Under the “Mukhyamantri Unnat Godhan Prakalp” programme launched by the Dept. in the year 2020-2021 A.I. of dairy animals using sex sorted semen is going on to augment the state’s milk production [7].

Table 2: Ongoing schemes initiatives taken by state government for strengthening livestock sector [7]

Dairy sector	Egg sector	Meat sector
Dairy scheme through heifer distribution (2 Crossbred)	Poultry scheme (30 nos. LIT birds)	Piggery scheme (1M+5F)
Distribution of breeding bull	Malmata broiler scheme (200 nos. birds)	Malmata piggery scheme (1F+1M)
Malmata cattle scheme (1 CB cow with a calf)	Duckery scheme (50 nos. ducklings)	Goat scheme (1M+3F)
	Malmata backyard poultry (10 nos. birds)	Mala Fungunan piggery scheme (1M/F)

Fodder production scenario

Feed and fodders are the essential component of livestock rearing and they comprise 60-70% of total production cost. Livestock production is more efficient from cultivated fodder than from the degraded grazing lands. Fodder crops that are widely cultivated in the state of Tripura include Hybrid Napier, Guinea grass, Congo Signal, Stylosanthes, Cow pea, Oats, Maize, Tuber crop (Tapioca) and Azolla.

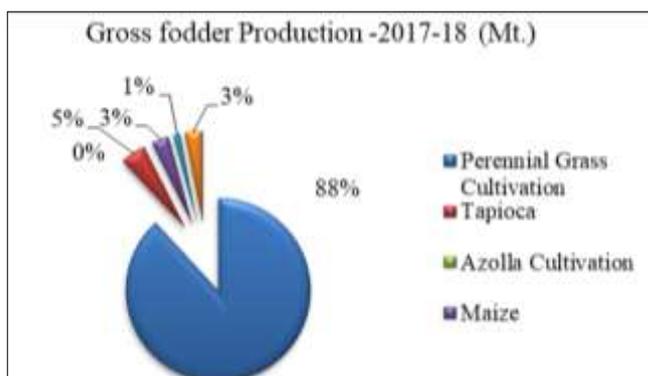


Fig 2: Percentage gross fodder production in Tripura [7]

Good quality fodders are responsible for maintaining the nutritional status of the animal. It should contain vital nutrients like highly digestible protein, carbohydrate, fat and essential minerals.

Among the land utilization for fodder, perennial crop is yielded in the majority of the land (38%). Oat is produced in majority of the land (20%) during the summer period which required fewer amounts of water and maintenance whereas tapioca is produced mainly in the land area (18%) where other grasses are difficult to grow. Tapioca tubers are most commonly used in pig feeding. The next fodder produced in maximum land (16%) is maize, a seasonal fodder. This fodder also requires less water compared to other fodder. Cow pea is produced in limited area (8%). Azolla- an aquatic fern having high protein content can be used as animal feed supplement. It can curtail the feed cost by 25-30% without hampering the productivity but very few farmers are interested in Azolla cultivation which could be the reason of low production in the field. There is need for awareness regarding Azolla incorporation in feed to improve animal productivity^[7].

Tripura, a North-eastern state is reporting high rainfall (1922 mm to 2855 mm), which enables grasses to grow throughout the year. Therefore, farmers are more inclined towards farming of perennial grasses (88%) rather the seasonal grasses. The next of this perineal grass production is tuber crop (Tapioca, 5%) production. Farmers are mainly concentrating on tuber crop production due to high demand in pig farming. Pigs are voracious eater, they easily accustomed with the new feed such as tapioca. It is a rich source of carbohydrate which helps in the fattening of pig. Very less farmers are interested in rearing seasonal fodder like cultivation of Maize and Oats. Both of them individually contribute 3% of total fodder production. Cow pea production is very less, contributes only 1% in total fodder production. Azolla contribution is almost nil produced at certain places by farmers as a supplement with the concentrate feed. It is one of the best available plant protein sources.

There are 7 Fodder seed production Farms under State Govt. (1) R.K. Nagar Fodder Farm (2) Debipur Fodder Farm (3) B.C. Manu Fodder Farm (4) Nalicharra Fodder Farm (5) Nalkata Fodder Farm (6) SPF Gandhigram Fodder Farm & (7) Hawaibari Fodder Farm. Various field and farm level fodder cultivation and development projects have been initiated under schemes such as NLM and MGNREGA. Moringa (locally known as sajina/sejna) cultivation has been introduced by ARDD as Moringa is a superfood with high protein content and other nutritive values and can be used as feed supplement for livestock. The fodder production from fodder development activities in Govt. farms are given below in Table 3.

Table 3: Fodder production in govt. farms under fodder development schemes w.e.f. 2018^[7]

Total Green production	3087.491 MT
Total Silage production	660.00 MT
Total Hay production	24.062 MT
Total Tapioca production	15.75 MT
Total Azolla production	1.5692 MT
Revenue earned from cash sale of greens and cuttings	Rs. 6.86312 Lakh

Prospects of livestock farming in Tripura

Livestock is the primary subsistent activity used to meet household food needs as well as supplement farm incomes.

Farmers shows much interest in integrated farming systems in the state. Integrated farming system (IFS) is a valuable approach to addressing the problems of sustainable economic growth for farming communities in the country^[8]. As the state is mostly covered with hills, the farming suited and adopted by the farmers is integrated farming systems. Farmers earns consistent amount of income throughout the year from adoption of integrated farming systems. Due to keen interest of the farmers in livestock rearing, there is huge scope for progressive growth of livestock population in Tripura. The state also has the potential to adopt organic farming which would fetch a handsome amount of income to the farmers. As most of the individuals prefer eating pork in the community, large numbers of educated youth and entrepreneurs in the recent days shows interest in pig farming venture.

Recently with the approval of Tripura's first international waterways connecting with river Gomati as Indo-Bangla water route, it has the potential to export and import livestock and livestock products and in building the economy of the state.

Conclusion

Livestock sector has immense importance in agrarian economy of Tripura for employment and income generation. Successful implementation of various livestock developmental schemes in the state will boost production in animal sector. Adoption of integrated farming systems in the state would act as a source of income for women and unemployed youth to make a living. Marketing channels of various livestock and livestock products should be properly monitor to create suitable environment for trading. It's proximity with East and South East Asian countries such as Bangladesh, Myanmar, Bhutan and, China can open up channels for future trade and economics. Development of livestock and agriculture sector in Tripura and North Eastern India will help in upliftment of the socio-economic condition of the much neglected region and may help in pushing forward the look east policy.

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