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## Adopted way of pig rearing practices in Tripura

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#### Abstract

In the present study an attempt was made to know the adopted pig rearing practices in villages in Tripura by Farm characteristics and different pig management practices on different aspect on 608 animals and 357 farmers from 3 districts of Tripura by using a structured questionnaire and self observation. The result revealed that farmer rear crossbred 77 % (468/608) over local bred 16 % (97/608) for fattening purpose 78% (474/608). Pigsty is mainly made of locally available materials. Without any kind of housing by tethering 31% (111/357) of farmers practiced pig rearing. Feeding is mainly boiled kitchen waste along locally available weeds and homemade concentrate 2-3 times. Natural breeding are practice by all farmers. Castration and Deworming is most common practice by farmers. There were lack of proper knowledge about of general care, housing, breeding, diseases and other related management aspect found in the present study.

**Keywords:** Crossbred, tethering, kitchen waste, castration, management

#### Introduction

Tripura is home to a diverse mix of tribal cultures and religious groups. This is an agrarian state with more than half of the population dependent on agriculture and allied activities. However, due to hilly terrain and forest cover, only 27 % of the land is available for cultivation. About 30 per cent of Tripura's population are Scheduled tribes of 19 different tribes' community. A farmer is a rational decision maker who seeks ways of adopting new technologies to accomplish the goal [5, 6]. Among all tribes community pig rearing is an important source of income. Pig is mainly concentrated in North-Eastern Region, where almost 40% of the country's total pig population exists. Majority of our pig population is reared by marginal and small farmers. Pig rearing has a specialized significance as it can play an important role in improving the socio-economic status of the weaker population. There is a good demand for pork and most of the pork produced is consumed locally. Tripura indigenous Dome and Mali pigs are the major pig breeds available. There is little documented information regarding the adopted pig rearing practices and management in villages of Tripura. In the present study an attempt was made to evaluate the adopted pig rearing and management practices in Tripura by Farm characteristics (breed type, labour, daily time devoted to pig, herd size and source of stock) and management practices (Housing management, Feeding management, Breeding management, Health management and General care management).

#### Materials and Methods

##### Study area and population

Tripura has a tropical savanna climate. The four main seasons are winter, from December to February; pre-monsoon or summer, from March to April; monsoon, from May to September; and post-monsoon, from October to November. During winter, temperatures range from 13 to 27 °C (55 to 81 °F), while in the summer they fall between 24 and 36 °C [1]. The average annual rainfall between 1995 and 2006 ranged from 1,979.6 to 2,745.9 mm [4]. Presently, the state had eight districts.

Information on various adopted pig rearing management practices opted by the pig farmers in the rural village of Tripura were collected by using a structured questionnaire and self observation from 20 villages of 3 districts of the State i.e. Dhalai District (10 villages, 231 farmers and 389 animals), Unokuti District (5 villages, 69 farmers and 127 animals) and North Tripura District (5 villages, 57 farmers and 92 animals). Farmers (357 ) were interviewed to know about Farm characteristic (breed type, daily time devoted to pig, purpose of rearing, and sale of animal) and management practice aspect related to Housing, Breeding, Feeding, Health Care and General Management. The data was analyzed by using SPSS computer programme [9].

## Results and Discussion

In this study, 357 farmers were interviewed to know different adopted pig rearing practice in Tripura.

It was revealed that age of the farmers ranged from 20 to 65 years. Majority of the farmers were above 25 years (87%, 311/357) of age. Education level ranged from illiterate to graduation and annual income of the farmers ranged from Rs: 30,000/- to Rs: 3 lakhs. The contribution from pig sector in the annual income is a great source for family expenditure. Family size ranged from 2 to 9. The farmers keep a herd size of 1 to 3 pigs. The finding of different adopted pig rearing practice and farm characteristic of Tripura farmers mentioned below.

### Farm Characteristic

Data were collected from 357 farmers having total 608 numbers pig of 3 district of Tripura related to the farm characteristic compromising breed type, sex of pigs, herd size, purpose of rearing, daily time devoted to pig, marketing age and source of stock were studied and revealed following finding presented in the Table 1. In this study, it was found that 77% (468/608) pigs were crossbred, 16 % (97/608) local bred, 7% (37/608) exotic and 78% (474/608) pigs reared for fattening purpose. In comparison to this study, It were reported that 92% of the farmers' rear crossbred pigs in Mizoram[7] and in Tripura 84% farmers rear crossbred for fattening purpose were 71% [8].

### Adopted Housing Practice

During this study, it has been observed that around 67% (239/357) farmers having pigsty and only 6% (14/239) have constructed pigsty with bricks and 14 % (34/239) pigsty have

proper floor space as majority farmer kept their pig in to small area without proper floor space as they does not have any knowledge about required floor space. Certain percentage practiced with a raised platform housing above 2-3 feet from the ground. No separate pen for gilt and furrowed sows. Majority of pig farmers 94% (225/239) constructed their pigsty with locally available materials like bamboo, woods, tree branches etc and some farmers use Tin (Fig: 1) or Polythene sheet as roofing material beside straw or tall grass The roof top is very low mainly 4-5 ft. Floor made of Wooden or bamboo and Bricks are common in 47% (113/239) and 32% (77/239) respectively. Pigsty made without any floor material directly on mud 21% (49/239). The floor space per adult was found to be inadequate (average 13 sq.ft) in majority 86% (205/239) of the farms. There is absent of proper drainage system in the all farm. It has been observed that large numbers of farmers reared their pig by tethered 31% (111/357) with the help of 5 to 10 ft long leash tie on their neck or around chest guard or one of the legs attach with a pole or with tree root without any housing (Fig: 2). Farmers rearing pigs with tethering keep their pigs below trees to protect them from direct sunlight and during rain pigs keep under roof. Farmers revealed that water lodge mud near tethered place keeps pig cool as they bathe them self in it. Only 2% (7/357) farmers practice scavenging (Fig: 3) kind of rearing allow on at daytime. It were reported that majority of farmers in Tripura reared pigs in backyard 79% without specific housing 66% arrangement [8]. In present study, water storage facility and electricity facility present only found in 5% and 3% respectively. The result of adopted housing practice presented in the Table 2.

**Table 1:** Farm characteristic observed from the study of the pig farmers

Sl. No.	Particulars	Percentage	
		N=608	N=357
1.	Breed type:		
	1. Cross Breed	77 % (468/608)	
	2. Local Breed	16 % (97/608)	
	3. Exotic Breed	07 % (43 /608)	
2.	Sex of pigs:		
	1. Male	57% (347/608)	
	2. Female	43% (261/608)	
3.	Purpose of rearing:		
	1. Fattening	78% (474/608)	
	2. Breeding	22% (134/608)	
4.	Daily time devoted to pig		
	1. 1 hour	69% (246/357)	
	2. More than 1 hour	31% (111/357)	
5.	Marketing age		
	1. Within 1 year	81% (289/357)	
	2. Above 1 year	19% (68/357)	
6.	Source of stock		
	1. Local market	87% (311/357)	
	2. Organized farm	13% (46/357)	
7.	Selling of Pig		
	1. Sell after slaughter	19% (68/357)	
	2. Sell to vendor as live	81% (289/357)	

**Table 2:** Adopted Housing practices followed by the pig farmer

Sl. No.	Housing practices	Percentage (N=239)
1.	Pigsty constructed with:	
	1. Bamboo and woods etc	94% (225/239)
	2. Bricks	6% (14/239)
	3. Others	00% (00/239)
2	Construction of floor:	
	1. Bamboo and Wood	47% (113/239)
	2. Concrete	32% (77/239)
	3. Mud floor	21% (49/239)
3	Floor space requirements:	
	1. As recommended	14 % (34/239)
	2. Less than recommended	86% (205/239)
4	Water storage facility:	
	1. Present	5% (12/239)
	2. Not Present	95% (227/239)
5	Electricity facility at pigsty	
	1. Present	3% (7/239)
	2. Absent	97% (232/239)

**Fig 1:** Pigsty made of locally available material with tin roof at Dhalai district**Fig 2:** Tethering of pig below tree on mud with stainless steel as feed vessels at Unokuti district**Fig 3:** Pig feeding with boil home made concentrate & kitchen waste and water in wooded feed vessels at North Tripura

### Adopted Feeding Practices

Traditionally kitchen waste mixing all different feeds together (rice bran, broken rice, crushed maize, dried fish, cola-cassia leaves and stems, tapioca roots etc) in proportion and after boiling giving it directly to the pigs is common practice by almost all farmers. They also provide cabbage, sweet potato, are main substitutes of Tapioca roots, Colocasia. Some farmers mainly tribal community use alcohol distilling (local alcohol can be made from millet, rice, maize, sweet potato etc mainly produce by tribal peoples) and Distillers' residues feeding to fattening pigs is common practice. Distilling residues locally known as 'MULI' used as feeding to pig after mixing with rice bran, maize, kitchen waste etc with or without boiling. Part of a carcass (Poultry birds mainly) offer as feed for pigs after boiling with kitchen waste and homemade concentrate. It was found that 99% (353/357) follows stall feeding and 1% (4/357) totally depends on scavenging. There is general practice of boiling feed in all farmer house before feeding to the pigs and provide 2 time followed by 73% (258/353). The farm equipments mainly iron or aluminum vessel for boiling feeds. Kitchen waste along with small quantity of homemade concentrate two times per day was main feeding practice in Tripura also reported [8]. Similar results were also reported in Mizoram [7]. The farmers of Assam, Mizoram and Nagaland boiled the feeds before giving to pigs [3, 10]. Only 5% provide clean water separately to the pig but maximum 95% provide water with feed in feeder.

Commonly used feeder is aluminium or stainless steel vessels but there is common practice use of wooded made feeder. Farmers who are having cemented floor they directly put feed on floor along with some water in separate vessels and It was recorded that supply of sufficient clean water to the pig is absent in all pig farm (Fig:4). Water sources mostly dependent on stream, pond, and deep tube well and water supply by Drinking water and sanitation (DWS) Department. During study it were observed that around 13% farmers cultivated Tapioca (Fig: 5) and practice Tapioca root feeding with their kitchen waste after boiling them. Feed supplement like mineral mixture, vitamins etc were not added to the feeds by 87% of the farmers.



**Fig 4:** Natural breeding of pigs at Dhalai district



**Fig 5:** Young boar on scavenging at Unokuti District



**Fig 7:** Cultivated Tapioca on farmers land, Dhalai district

#### Adopted Breeding Practice

In present study it found that only 22% (134/608) pigs rear for breeding purpose and only 17% (61/357) such farmers were found. All of them followed natural breeding (Fig: 6) as artificial insemination for is not available in Tripura. For breeding purpose mainly they prepare cross bred animal or exotic breed boar. Landing of breeding boar to neighbour farmers and nearby villages also observed in the present study. In Mizoram, it were recorded that 75% followed artificial insemination practices and 74% of the respondents followed the practice of twice farrowing of sow in a year [7]. In present study it found that generally 42% (26/61) farmers breed their sow with boar on 1st day of heat. Majority of the farmers 90% (55/61) does not treat repeat breeding sows and preferred to sell them.



**Fig 6:** Newly weaned piglets on bricks floor with insufficient floor space, North Tripura

#### Adopted Health Management

Disease control measures such as vaccination 11% (39/357) were found to be rare and maximum farmer have lack of knowledge regarding pig diseases. However, it was observed that deworming practice by maximum farmers 72% (257/357) as they believe that worm infection is responsible for poor growth of pigs. Tether wounds observed on the neck, hearth gird and leg of the pigs and potentially leading to maggot wound and secondary bacterial infections. They generally use naphthalene, tobacco leave, turmeric for maggot wound a malpractice by them. Large number of farmers reported recurrent diarrhoea is a common problem in pig farm. it was found that lack of proper hygienic at the farm without proper drainage, cleaning of pigsty, supply of dirty water and mainly reared by tether without floor on mud were leading cause for diarrhoea. Iron injection to piglets only practiced by farmer 9% (32/357) of farmers and a leading cause to piglet anaemia. Farmers have believed that pig reared on mud and pig bath in watery mud has less chance of ectoparasitic infestation and help pigs to maintain their body temperature at hot weather. It were mentioned that local farmers in West Kenya belief letting the pigs bathe in the mud would control the common ectoparasites and may potentially serve as a control strategy for ectoparasites [2]. It also revealed that 76% (271/357) farmers generally go for treatment of sick animals and for treatment at first 65% (176/271) farmers approach Para veterinarian for treatment of the sick animal in Tripura. The result of adopted health care practice is presented in the Table 4.

**Table 3:** Adopted feeding practices followed by the pig farmers

Sl. No.	Feeding management practices	Percentage (N=357)
	Method of feeding	
1.	1. Only Scavenging	1% (04/357)
	2. Stall fed	99% (253/357)
	Types of ration used(Except Scavenging)	
2.	1. Kitchen waste with concentrated feed	94% (332/353)
	2. Concentrated feed only	6% (21/353)
	Boiling of feeds(Except Scavenging)	
3.	1. Boiled	83% (293/353)
	2. Not boiled	17% (60/353)
	Feeds supplements (Except Scavenging)	
4.	1. Used	13% (46/353)
	2. Not used	87% (307/353)
	Use of locally available weeds with Feeds(Except Scavenging)	
5.	1. Used	90% (318/353)
	2. Not used	10% (35/353)
	Time of feeds supplied to pigs (Except Scavenging):	
6.	1. Once in a day	00% (00/353)
	2. Twice i.e. Morning and Evening	73% (258/353)
	3. Thrice i.e. Morning, Noon and Evening	27% (95/353)

**Table 4:** Adopted Health care management practices followed by the pig farmers.

Sl. No.	Health care practices	Percentage (N=357)
	Treatment of sick animals:	
1.	1. Treated	83% (296/357)
	2. Not treated	17% (61/357)
	Vaccination:	
2.	1. Vaccine practiced	11% (39/357)
	2. Vaccine Not Practiced	89% (318/357)
	Deworming of pigs:	
3.	1. Used to done	72% (257/357)
	2. Not done	28% (100/357)
	Giving of iron injection to piglets:	
4.	1. Practiced	09% (32/357)
	2. Not practiced	91% (325/357)

### Adopted General Care Management Practices

The general care and management practices studied include cutting of needle teeth, cutting of piglets tail, weaning of piglets, castration, care to pregnant sow, care after farrowing, cleaning of pigsty, bathing of pig etc presented in the Table 5. Castration and weaning was to be practiced by all the farmers within 2 to 2.5 months. The reason behind castration farmers kept that the castrated pig grow faster than non castrated pig and they also said no castrated pig meat had a bad smell. The practices of castration were very common in Mizoram [3].

Though it was found that the farmers never paid proper attention to their pregnant sows but 70 % of them took special care of their sows after farrowing. The study revealed that cutting of needle teeth and tail of the piglets does not practice by farmer to prevent the teat injury to the mother and tail bite injury by piglets each other as that are unknown to them. Nearly two-third (65%) of the farmers cleaned their pigsty daily and 30 % of the farmers used pig waste as manure for cultivation.

**Table 5:** Adopted General management practices followed by the pig farmers

Sl. No.	General management practices	Percentage (N=357)
	Cutting of needle teeth of piglets:	
1.	1. Practiced	00% (00/357)
	2. Not practiced	100% (357/357)
	Cutting of tail of piglets:	
2.	1. Practiced	00% (00/357)
	2. Not Practiced	100% (357/357)
	Castration of Male piglets:	
3.	1. Practiced	88% (314/357)
	2. Not Practiced	12% (43/357)
	Special care to sows after farrowing:	
4.	1. Practiced	70% (250/357)
	2. Not Practiced	30% (107/357)
	Bath of pigs:	
5.	1. Practiced	94% (336/357)
	2. Not Practiced	6% (21/357)
	Clean of pigsty (excluding scavenging & tethering )	
6.	1. Daily	68% (163/239)
	2. Alternative days	23% (55/239)
	3. Twice in a week	09% (21/239)

## Conclusions

From the present study some interesting facts and silent feature comes out about adopted pig rearing and management practice in Rural Tripura. The farmers preferred to rear cross-bred animals then local breed for better growth performance and larger litter size. Kitchen waste with small quantity of locally available grains and weeds after boiling 2-3 times are main feeding schedule for pigs. Uses of Feed supplement like mineral mixture, liver tonic, vitamins were less. Deworming practiced by maximum farmers but use of vaccination for swine fever, FMD and iron injection to piglets is very less. Castration to male piglets reared for fattening purpose generally practice by all farmers. Cutting of needle teeth, cutting of tail never practice by farmers. Special care to the pregnant sow and furrowed sow received very less attention. Farmers were generally unknown regarding hosing systems and different diseases of pigs except worm infection. Allowing pigs to scavenge is needed to restrict to prevent acquired of different diseases. The results of the present study clearly indicated that more extension activity is necessary for improved scientific pig rearing practice adaptation in Tripura and training to farmers on scientific management and practice of pigs will provide pig farmers with an additional economical profit in pig production.

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## References

1. Annual plan. Department of Agriculture, Government of Tripura, 2011-12. Retrieved 30 October, 2012.
2. Mutua FK, Dewey CE, Arimi SM, Ogara WO, Githigia SM, Levy M *et al.* Indigenous pig management practices in rural villages of Western Kenya. *Livest. Res. for Rural Dev.* 2011, 23(7).
3. Kumar R, Pal PP, Prasad K, Prakash N. Modernizing Tribal Piggery A Delineated Approach. Division of Agricultural Extension, ICAR Research Complex for North-Eastern Hill Region, Umium, Meghalaya, Indian. Res. Bul. No, 2002; 47:22, 24, 29.
4. Monthly and yearly quinquennial average rainfall in Tripura. Statistical abstract of Tripura. Directorate of Economics & Statistics, Planning (Statistics) Department, Government of Tripura, 2007, 13. Retrieved 30 October, 2012.
5. Nell WT, Schalkwyk, van HD, Sanden JH, Schwalbach L, Bester CJ. Adoption of Veterinary Surgeon Service by Sheep and Goat Farmers in Qwaqwa, Agrekon, 1998; 37(4):418-434.
6. Oladele IO. Farmers Feedback on Pig Production Technology in Kwara State, Nigeria, 2004.
7. Rahman S, Barthakur S, Kalita G. Pig production and management system in Aizawl District of Mizoram, India. *Livest. Res. for Rural Dev.* 2008; 20(9). Article: 139.
8. Sharma A, Debbarma N, Pramanik PS. Pig management practices in Tripura, India. *Indian J. Of Ani. Res.*, 2015; 49(6):863-865.
9. Statistical Package for Social Sciences (SPSS). SPSS Graduate Pack 15.0., 2006.
10. Varma A, Yadav BPS, Sampath KT, Roy DJ. Livestock

feeds feeding habits in north eastern hill of India. Division of Animal Nutrition, ICAR Research Complex for North-Eastern Hill Region, Umium, Meghalaya, Indian. Res. 1982; 17:22, 24, 29.