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Borah B

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Borgohain A

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Roychoudhury R

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Sonowal S

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Sonowal D

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Kalita M

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Dutta KJ

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

Khuman LS

Lakhimpur College of Veterinary
Science, AAU, Joyhing, North
Lakhimpur, Assam, India

Bordoloi G

Lakhimpur College of Veterinary
Science, AAU, Joyhing, North
Lakhimpur, Assam, India

Correspondence

Borah B

College of Veterinary Science,
AAU, Khanapara, Guwahati,
Assam, India

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A study on ethno-traditional processing of pork in Assam, India

Borah B, Borgohain A, Roychoudhury R, Sonowal S, Sonowal D, Kalita M, Dutta KJ, Khuman LS and Bordoloi G

Abstract

A study was carried out in four prominent districts of Assam i.e. Dhemaji, Karbi Anglong, Kamrup and Baksa district where the traditional processing of pork is commonly done by the tribal communities. Data were collected from a total of 100 respondents through a pre-tested, reliable and valid interview schedule. Majority of the respondents belonged to Schedule Tribe caste and mostly were farmers. About 46 per cent of the respondents out of 100 respondents processed pork and majority (40 per cent) from them processed it occasionally at home. About 30.43 per cent of the respondents processed pork basically for their own consumption. The mean availability of processed pork was highest in Kamrup followed by Dhemaji. The storage problem, practicing in fewer quantities and costing related to processing (costly affair), poor marketing system were the major factors which impeded commercialization of traditional process pork in many areas of Assam.

Keywords: Assam, ethno-traditional, pork and processing

Introduction

Traditional Processed pork is considered to be any part of pork which has been modified, in order either to improve its taste or to extend its shelf life by traditional methods. In Assam, its importance is placed in the social and cultural life of many tribal communities. Moreover, the ethnic and tribal groups are confined to their traditional ways and customs where meat consumption is an integral part since time immemorial. Apart from the fresh meat production and traditional processing, a sizeable portion is preserved using their indigenous methods and ingredients. So a study was conducted with an objective to document the ethno-traditional processing of pork in Assam.

Materials and Methods

An investigation was undertaken in four prominent areas of Assam (Fig 1) i.e. Dhemaji, Karbi Anglong, Kamrup and Tamulpur of Baksa district where the traditional pork processing is most commonly done by the tribal communities. From these areas, 25 numbers of respondents from each area were randomly selected, making the total sample size of 100. For our generalization, we assumed that Assam was represented by these four areas to fulfill the objectives. Data for various relevant aspects were collected through a pre-tested, reliable and valid interview schedule. The Test-retest method was used and the co-efficient of correlation (r) was found to be 0.85; which meant that the interview schedule applied was highly reliable. The data thus collected were scored, compiled and tabulated as per the established norms and procedures and were subjected to appropriate statistical analysis (frequency-percentage and Pearson's Correlation) in order to arrive at a conclusion in respect of set objectives. For documentation, the photographs and details about the traditional pork products were taken by the authors themselves.

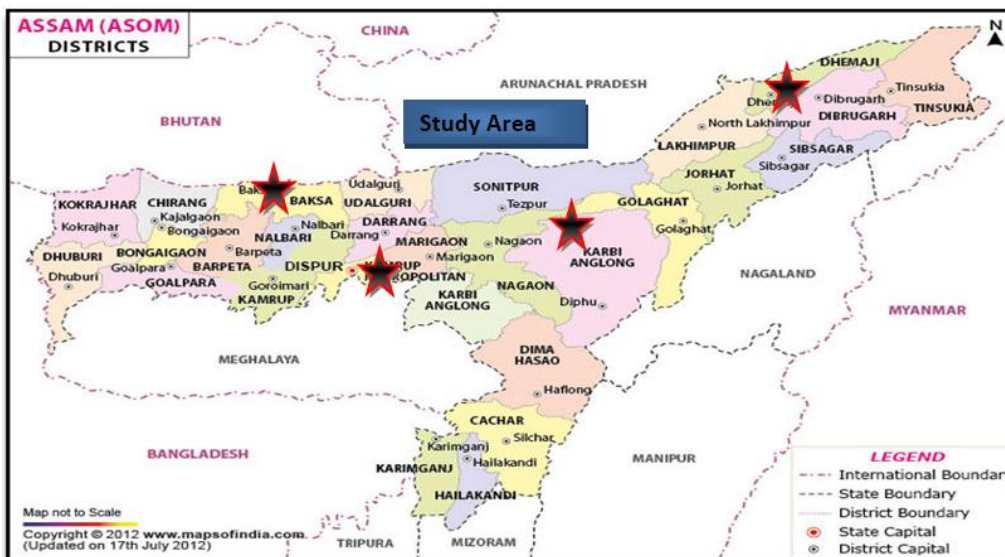


Fig 1: Map of Assam Showing Study Areas

Results and Discussion

1. Socio economic profile of the respondents

From the study it was found that, about 59.00 per cent of the respondents who traditionally processed pork belonged to the middle aged group with a mean age of 31. They mostly belonged to the Schedule Tribe caste (72 per cent) of Assam and mostly were farmers. The mean educational status was found to be 3.43 (i.e. till middle school level). The average pig herd size maintained by the respondents was 4 numbers and majority (75 per cent) of them reared pig for fattening purpose. The average annual income from piggery sector and gross annual income of the respondents was Rs. 28,135 and Rs. 85,870 respectively. Support from the studies of Deka *et al.* (2007) [4] and Payeng (2013) [7] also could be drawn in favour of the present context.

2. Traditional processing of pork at home

Table 1 revealed that, about 46.00 per cent out of 100 respondents generally processed pork at home. It was also found that among those respondents, they basically processed pork for their own consumption. The reasons might be due to the fact that, the people in the surveyed areas were habituated mostly to fresh pork than processed one. Moreover, processing of pork is mainly done by the tribal communities during winter seasons or in festive seasons, when the availability of pork is more (Deka and Thorpe, 2008) [3]. Deka *et al.*, (2007) [4] reported that, in Assam, processing of pork is basically done when the consumers have surplus pork especially after any feast or rituals. Similar findings were also reported by Payeng *et al.* (2013) [7] in his study.

Table 1: Traditional processing of pork at home

Traditional Processing of pork (n=100)			Frequency of processing pork (n=46)		
Do not process pork	Process pork		Regularly	Often	Occasionally
54 (54.00)	46 (46.00)		0 (0.00)	6 (13)	40 (87)
Purpose (n=46)					
Traditional purpose	own consumption	Commercial purpose	Surplus meat after any occasion	Upcoming festival	To treat guest
9 (19.57)	14 (30.43)	0 (0.00)	13 (28.26)	4 (13.04)	4 (8.70)

Note: Figures in the parentheses () indicate percentages.

3. Availability of processed pork

The Table 2 depicted that the mean availability of processed pork was highest in Kamrup district (Guwahati) followed by Dhemaji, Karbi Anglong and Tamulpur. And the F value was found to be highly significant (49.18**) which indicated that the availability of processes pork in the four surveyed areas differed significantly. The processed pork products were available in many pork shops with a fixed price rate in Kamrup. The reasons might be due to the fact that, Kamrup is

a metropolitan city and the demand for processed meat was very high as compare to other places of Assam. In Mishing community of Dhemaji, smoked pork is preferred and processed traditionally in their kitchen and were mostly available during every festive and winter seasons. However, in karbi Anglong and Tamulpur, processing of pork is mainly done for own consumption or when Surplus meat is left. Similar result was also reported by Deka *et al.* (2007) [4].

Table 2: Frequency distribution of the respondents on the basis of availability of processed pork

District	Mean	SD	Range	Categories			'F' value
				Low	Medium	High	
Dhemaji (n=25)	10.44	1.08	9-12	5 (20.00)	14 (56.00)	6 (24.00)	49.18**
K. Anglong(n=25)	9.84	0.75	9-11	9 (36.00)	11 (44.00)	5 (20.00)	
Kamrup(n=25)	12.32	1.18	10-14	7 (28.00)	13 (52.00)	5 (20.00)	
Tamulpur(n=25)	9.00	0.96	8-11	8 (32.00)	12 (48.00)	5 (20.00)	
Pooled (n=100)	10.40	1.58	8-14	8 (8.00)	68 (68.00)	24 (24.00)	

Note: Figures in the parentheses () indicate percentages.

**, significant at 1 per cent level of probability

4. Factors affecting commercializing of traditionally prepared processed pork

From Table 3 it was found that, the first 3 main factors affecting the commercialization of processed pork were storage problem, practicing pork processing in fewer quantities and costing related to its processing. In Assam most of the pig rearers are poor who hardly could afford large storage system and moreover, they processed it in few quantities, that too only when they have surplus pork available (Deka *et al.*, 2007) [4]. Unlike in Kamrup district no

processed pork products were observed commercially in the other surveyed areas. This could be explained by the fact that, in Assam, regarding pork and its product, the preference is mainly for fresh, warm and newly slaughtered pork by the pork consumers. Though, commercially prepared value added pork products were available in some market but due to its high cost, consumers cannot afford although they like it. These finding received supports from the study of Deka *et al.* (2007) [4], Nyameh *et al.* (2013) [6] and Bime *et al.* (2014) [2].

Table 3: Factors affecting commercializing of traditionally prepared processed pork

Factors (n=100)	Highly agreed	Agreed	Somewhat agreed	Not agreed
Poor marketing system	69 (69)	6 (6.00)	16 (16.00)	9 (9.00)
Preference for fresh pork	49 (49)	23 (23.00)	26 (26.00)	2 (2.00)
Less habituated with processed pork storage problem	0 (0)	1 (1.00)	51 (51.00)	48 (48.00)
Practicing in fewer quantities	100 (100)	0 (0.00)	0 (0.00)	0 (0.00)
Low demand in the market	27 (27)	25 (25.00)	20 (20.00)	28 (28.00)
Health & hygiene concern	7 (7.00)	30 (30.00)	63 (63.00)	0 (0.00)
Costing related to processing	100 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)
Less awareness on commercializing	31 (31.00)	31 (31.00)	38 (38.00)	0 (0.00)

Note: Figures in the parentheses () indicate percentages.

5. Correlation between processing of pork with Independent variable

Table 4 revealed that, the processing of pork by the respondents was positively and high significantly ($p < 0.01$) correlated with herd size [$r = 0.44^{**}$]. There would be a proportionate increase in income with increase in herd size. When the herd size increases the farmer become fully engaged with piggery husbandry and make a venture for further benefit by it by selling pork and by processing of pork

through proper marketing channel. It was also negatively and high significantly ($p < 0.01$) correlated with their primary occupation [$r = -0.52^{**}$]. It could be explain by the fact that, with the increase of occupation score the concern individual becomes engaged with so many activities and cannot pay attention to pork processing with a specialized job. Therefore, a negative correlation between these two is natural. Similar findings were also reported by Ashalatha and Prabhakar (2010) [1].

Table 4: Correlation between processing of pork with Independent variables

S. No	Pearson's Correlation between the variables	processing of pork
1	Age	0.18 ^{NS}
2	Educational qualification	0.17 ^{NS}
3	Primary occupation	-0.52 ^{**}
4	Herd Size	0.44 ^{**}
5	Income from piggery sector and Gross annual income	0.02 ^{NS}

NS- Non significant, **significant at 1 % level of probability, *significant at 5 % level of probability

6. Traditional processed pork of Assam

In Assam, surplus pork is processed and preserved by some traditional processes i.e. by drying, by drying cum smoking, salting, drying with local herbs, by fermentation. It is also observed that indigenous herbs, leaves of trees, roots, seeds, liquid vegetable extracts, spices and oils are used for preservation of pork products. The products as well as

methods of preservation vary region to region and even among the ethnic groups. Some of the meat products are preserved months together in normal room temperature (Hazarika, 2013) [5]. Some of the traditional processed pork products found in Assam with their idiomatic term and procedure of processing are given in Table 5.

Table 5: Traditional pork products found in Assam with their idiomatic term

S. No	Local Name	Processed by (Community)	Procedure
1	<i>Asan adin</i> (Fig 1 and 2)	Mishing	Pork is boiled and smoke-dried for two to three days. It is generally wrapped with Ekkum leaves (<i>Phyrmium</i> spp) and can be stored for 2 weeks in winter.
2	<i>Eg-adin banum/ Khaophram</i> (Fig 3)	Mishing and Bodo	Mild cooked pork pieces - marinated with local spices - roasted over fire until turns into golden brown
3	<i>Eg-adin Luktir</i> (Fig 4)	Mishing	Dried pork mince into smaller pieces and mixed with dried bamboo soot, dried chilly and local herbs and spices
4	<i>Cheu</i> (Fig 5)	Deuri	Semi-Boiled pork pieces smeared with turmeric, red chilli and salt - woven in bamboo sticks & roasted over fire (Charcoal)
5	<i>Honohein</i> (Fig 6)	Dimasa and Karbi	Dried pork used for curry preparation
6	<i>Noausoum</i> (Fig 7 and 8)	Dimasa and Karbi	Boiled rice smeared over the boiled pork pieces filled tightly in bamboo cans and sealed-fermentation occurs within few days and acts as preservative
7	<i>Saphak</i> (Fig 9)	Dimasa, Kukki, Hajong, Karbi, Hmar	Boiled fats of pork-kept in air tight bottle and used in curry preparation

8	<i>Sathu</i> (Fig 10)	Kukki, Hajong and Hmar	Pieces of pork fat-half boiled pork –kept inside the sathu (Water gourd) container -kept near the fire for 4-5 days- long shelf life-used in curry.
9	<i>Ashikioki</i> (Fig 11)	Kukki tribes	Thinly sliced dried pork taken with fermented bamboo shoot /soybean
10	<i>Gahori Achar</i> (Fig 12)	Pork consumers in Assam	Pork pickle made marinated with mastard oil, vinegar, salt, chilli and other locally available spices.

Source: Author’s personal collections & Hazarika (2013) [5]



Fig 1: Traditional preparation of Asan adin (smoked)



Fig 4: Eg-adin Luktir



Fig 2: Asan adin wrapped with Ekkum leaves (*Phrynium* spp)



Fig 5: Cheu



Fig 3: Eg-adin banum or Khaophram (Roasted)



Fig 6: Honohein



Fig 7: Noausoum (Boiled rice smeared over the boiled pork pieces)



Fig 10: Sathu in curry



Fig 8: Noausoum (boiled pork pieces filled tightly in bamboo cans)



Fig 11: Ashikioki



Fig 9: Saphak



Fig 12: Homemade Pork pickle

Conclusion

Traditionally processing of pork is basically done by the tribal communities of Assam. But, there was no commercial angle developed in value addition or processing of pork as yet in the state. In this respect initiatives need to be taken both at Government and private sectors for commercializing traditional pork processing to meet up the demands of processed pork particular to urban consumers at affordable cost. In the rise of urbanization and remarkable economic growth, there has been an immense rise in the demand of quality processed and value added pork which has paved a way for employment generation (like Self Help Group, public private entrepreneurship etc.) for the unemployed youth in the rural areas. Hence, it can assumed that traditional processed meat markets possess a crucial position in safeguarding the economic growth and sustainability for the people of Assam provided scientific procedure, availability of infrastructure, proper marketing system and aid from the government and public sector for value addition were maintained.

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