

Existing State of Affairs of Ethno-Traditional Pork Processing by the Tribal Pig Farmers of Assam, India

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ABSTRACT

A study was carried out in four prominent districts of Assam i.e. Dhemaji, Karbi Anglong, Kamrup and Baksa district where the availability and consumption of pork and its product was very high. Data were collected from a total of 100 respondents through a pre-tested, reliable and valid interview schedule. Majority of the respondents belonged to middle aged group and Schedule Tribe caste. Agriculture & livestock rearing were the primary occupations. The average pig herd size was 4 and reared pig mostly for flesh purpose. The average annual income from piggery sector and gross annual income of the respondents were Rs. 28135 and Rs. 85870 respectively. About 46.00 per cent of the respondents out of 100 respondents processed pork and majority (40 %) of them processed it occasionally. The majority (30.43 %) 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 costs related to processing, poor marketing system were the major factors which impeded commercialization of processed pork in many areas of Assam.

Key words: Ethno-traditional, Processing, Pork, Tribal Pig Farmers, Assam

INTRODUCTION

Assam has been a state where meat of variety of animals is consumed happily and by and large there is no or few inhibition or barrier for consuming many kinds of meat in the state. Apparently, pork and its product is the preferred meat followed by chicken, duck and chevon. Demand for beef probably remains much lower in districts of Assam (Haque, 2015).

Taste, rather than price is the prime criterion for purchasing meat by the tribes and non-tribes of Assam. Pork and its byproduct is a much sought after protein and the tribal consumers considered it as more tender, tasty and superior to the meat of any other species. Processed pork is important in the social and cultural life of many tribal communities of Assam (Shyam, 2015). 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 made with an objective to document existing state of affairs of Traditional Pork Processing by the Tribal Pig Farmers of Assam.

METHODOLOGY

An investigation was undertaken in four prominent areas of Assam i.e. Dhemaji, Karbi Anglong, Kamrup and Tamulpur of Baksa district where availability and consumption of pork was more. From these areas, 25 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 data thus collected were scored, compiled and tabulated as per the established norms and procedures and were subjected to appropriate statistical analysis in order to arrive at a conclusion in respect of set objectives.

RESULTS AND DISCUSSION

Profile of the respondents

The majority (59.00 %) of the respondents belonged to middle aged group with a mean age of 31 and mostly (72 %) belong to Scheduled Tribe caste. Agriculture & livestock rearing were the primary occupation of majority (31%) of the respondents followed by daily wager (29%)

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and agricultural labour (26%). The average pig herd size maintained by the respondents was 4 and majority (75 %) of them reared pig for fattening purpose. The average annual income from piggery sector and gross annual income of the respondents was Rs. 28135 and Rs. 85870 respectively.

Frequency of pork processing at home

Table 1 revealed that about 46.00 per cent of the respondents out of 100 respondents processed pork and majority (40 %) of them processed it occasionally at home. The reasons might be due to the fact that, the people in the surveyed areas were habituated mostly to fresh pork than processed pork and moreover, processing of pork is mainly done during winter season or in festive season where there is more availability of pigs. Among different items of pork, it was found that preference was mainly for fresh, warm and newly slaughtered pork. Processed (smoked) pork is also liked, but it is produced occasionally only when the consumers have surplus pork especially after any feast or rituals. Similar findings were reported by Payeng *et al.* (2013), Imchen (2014).

Table 1: Frequency distribution of the respondents on the basis of frequency of processing pork at home

| Areas | Respondents who processed pork (n=100) | Frequency of processing pork | | | |
|------------------|--|------------------------------|-----------|--------------|---------------|
| | | Regularly | Often | Occasionally | Don't process |
| Dhemaji (n=25) | 19 (76) | 0 (0.00) | 6 (24.00) | 13 (52.00) | 6 (24.00) |
| K. Anglong(n=25) | 15 (60) | 0 (0.00) | 0 (0.00) | 15 (60.00) | 10 (40.00) |
| Kamrup (n=25) | 5 (20) | 0 (0.00) | 0 (0.00) | 5 (20.00) | 20 (80.00) |
| Tamulpur (n=25) | 7 (28) | 0 (0.00) | 0 (0.00) | 7 (28.00) | 18 (72.00) |
| Pooled (n=100) | 46 (46) | 0 (0.00) | 6 (6.00) | 40 (40.00) | 54 (54.00) |

Note: Figures in the parentheses () indicate percentages.

Basic purpose of processing of pork

Table 2 showed that majority of the respondents processed pork basically for their own consumption and with leftover surplus pork. These findings proved that processing of pork was mainly done for own consumption and there was no commercial angle developed in value addition of pork in many areas of Assam yet. These findings received support from the study of Johari (2013), Imchen (2014) and Shadap (2015).

Table 2: Frequency distribution of the respondents on the basis of purpose of processing of pork

| Areas | traditional purpose | own consumption | Commercial purpose | when Surplus meat left | Upcoming festival/ occasions | To treat guest |
|-----------------|---------------------|-----------------|--------------------|------------------------|------------------------------|----------------|
| Dhemaji (n=19*) | 7 (36.84) | 4 (21.05) | 0 (0.00) | 2 (10.53) | 2 (10.53) | 4 (21.05) |
| Karbi | 2 (13.33) | 5 (33.33) | 0(0.00) | 4 (26.67) | 4 (26.67) | 0(0.00) |
| Anglong(n=15*) | | | | | | |

| | | | | | | |
|-----------------|-----------|------------|----------|------------|-----------|----------|
| Kamrup (n=5*) | 0 (0.00) | 5 (100.00) | 0 (0.00) | 0 (0.00) | 0 (0.00) | 0 (0.00) |
| Tamulpur (n=7*) | 0 (0.00) | 0 (0.00) | 0 (0.00) | 7 (100.00) | 0 (0.00) | 0 (0.00) |
| Pooled (n=46*) | 9 (19.57) | 14 (30.43) | 0 (0) | 13 (28.26) | 6 (13.04) | 4 (8.70) |

Note: Figures in the parentheses () indicate percentages.

*Respondents only those who processed pork

Availability of processed pork

The Table 3 depicted that the mean availability of processed pork was highest in Kamrup followed by Dhemaji, Karbi Anglong and Tamulpur. And the F value was found to be highly significant (49.18**) at 5 per cent level of probability which indicated that the availability of processes pork according to the respondents in the four pork areas differed significantly.

The value added 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 season and in winter seasons. However, in Karbi Anglong and Tamulpur processing of pork is mainly done for own consumption and when Surplus meat is left. Similar result was found by Shyam (2015).

Table 3: 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) | |
| 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) | 49.18** |
| 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

Traditional processed pork of Assam (Documentation)

In Assam, excess pork is processed and preserved by drying/ by drying cum smoking/ by 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 some meat 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 at normal room temperature.

Table 4: Traditional pork products found in Assam with their idiomatic term, origin and type

| Product Name | Origin | Type and description of the product |
|------------------------------------|--|---|
| Asan adin | Mishing tribes of Dhemaji | Pork is boiled and smoke-dried for two to three days. It can be stored for 10 to 12 days in winter |
| Eg-adin banum/ Khaophram (Roasted) | Mishing tribes of Dhemaji/ Bodo tribes of BTAD | Pork pieces mild cooked- marinated with local spices and condiments-woven in bamboo sticks roasted over fire until turns into golden brown |
| Eg-adin Luktir | Mishing tribes of Dhemaji | Dried pork mince into smaller pieces and mixed with dried bamboo soot, dried chilly and local herbs and spices |
| Cheu | Deuri community of Assam | Semi-Boiled pork pieces smeared with turmeric red chilli and salt woven in bamboo sticks & roasted over fire (Charcoal) |
| Honohein | Dimasa and Karbi tribe of Karbi Anglong | Dried pork used for curry preparation |
| Noau soum | Dimasa and Karbi tribe of Karbi Anglong | Boiled rice smeared over the boiled pork pieces filled tightly in bamboo cans and sealed-fermentation occurs within few days and acts as preservative |
| Saphak | Dimasa, Kukki, Hajong, Karbi, Hmar tribe of Dima Hasao | Boiled fats of pork-kept in air tight bottle and used in curry preparation |
| Sathu | Dimasa, Kukki, Hajong, Karbi, Hmar tribe of Dima Hasao | Pieces of pork fat-half boiled –kept inside the sathu (Water gourd) container - kept near the fire for 4-5 days- long shelf life-used in curry. |
| Ashi kioki | Kukki tribes and Naga tribes of Assam | Thinly sliced dried pork taken with fermented bamboo shoot /soybean |
| Gahori Achar | Most of the tribes in Assam | It is a pork pickle made with boiled or dried pork-kept inside a glass bottle marinated with oil, vinegar and other locally available spices. |

Source : Author's personal collection

Factors affecting commercializing of traditionally prepared processed pork

From Table 5 depicted some of the major factors which impede commercialization of traditionally prepared processed pork. 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 than for processed pork. Moreover, unlike in Kamrup district, no frozen or processed pork products were observed commercially in the areas surveyed in the district which may be due to poor marketing system, less demand for it in the local market or due to costly affair during processing. In comparison to the consumption of fresh pork, sales of processed pork products were very limited although demand was growing in Guwahati city, a market that is served by several private-sector players. Similar findings were also reported by findings of Haque (2015).

Table 5: Frequency distribution of the respondents on the basis of 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 | 0 (0) | 1 (1.00) | 51 (51.00) | 48 (48.00) |

| | | | | |
|-----------------------------------|--------------|------------|------------|------------|
| Storage problem | 100 (100) | 0 (0.00) | 0 (0.00) | 0 (0.00) |
| 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.

Correlation between processing of pork with Independent variable

Table 6 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 [$r = -0.52^{**}$]. With the increase of occupation score the concerned individual becomes engaged with so many activities and cannot pay attention to pork processing which a specialized job. Therefore, a negative correlation between these two is only natural. Similar findings were also reported by findings of Nyameh *et al.* (2013) and Imchen (2014).

Table 6: Correlation between processing of pork with Independent variables

| Pearson's Correlation between the variables | processing of pork |
|--|---------------------|
| Age | 0.18 ^{NS} |
| Educational qualification | 0.17 ^{NS} |
| Primary occupation | -0.52 ^{**} |
| Herd Size | 0.44 ^{**} |
| 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

CONCLUSION

There was no commercial angle developed in value addition of pork as yet in the state. In this respect, initiatives need to be taken both at Government and private sectors for commercializing 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 especially in the Kamrup district, 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 be assumed that processed meat markets possess a crucial position in safeguarding the economic growth and sustain

ability 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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