

An Analysis on Factors Influencing Consumption Pattern of Duck and Duck Products among People of Kerala, India

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Abstract: An analysis was carried out on the consumption pattern of duck and duck products among people of Kerala. About 285 consumers were selected for the study and an ex post facto research design was adopted. The study revealed that most of the consumers started eating duck and duck products during their childhood onwards and preferred beef, duck, fish and chicken to mutton, chevon and due to their food habit and low cost compared to mutton and chevon. Health consciousness and religious restrictions are playing an important role in the consumption of beef and pork. Most of the consumers consumed meat four times a week. The chicken, duck and beef has more market potential so duck and broiler production has to be increased in order to meet the demand since most of the unproductive cattle are being transported from neighboring states. Most of the people preferred to purchase fresh and hygienic duck meat but due to non availability of clean meat shops, they purchased it from road side shop. The people were not aware of the availability of different types of duck meat products. The livestock farmers, marketing agencies and extension organizations should taken in to account the various determinants such as preferences, choices, habit, affordability, traditions while formulating marketing strategies for duck and duck products.

Key words: Duck and duck products, consumption pattern, preferences, people, Kerala, India

INTRODUCTION

Ducks are the second largest source of table eggs and there are about 23 million ducks in India. Duck eggs have a preference over chicken eggs in certain states and areas of India. Duck farming is primarily popular among small farmers, marginal farmers and agricultural labourers as well as rural poor section of the country. Ducks require lesser attention and part of their feed requirement is met out by foraging, eating fallen grains in harvested paddy fields insects, snails, earthworms, small fishes and other aquatic species in water bodies viz., lakes, paddy fields and ponds hence reduce feed cost reasonably. Ducks have a longer productive life and continue to lay well even in 2nd year. Ducks flourish well in marshy riverbelt, wetland and barren moors where other types of poultry species do not. Ducks are suitable for integrated farming systems such as duck-cum-fish farming, duck farming with paddy cultivation, etc. Duck rearing is popular in some of the states like Assam, Tripura, Orissa, Madhya Pradesh andhra Pradesh, Kerala, Haryana and J and K.

A person's daily protein intake should be about 1 g kg⁻¹ body weight for adequate nutrition and ideally 30-50% of the daily protein intake should be of

animal origin in order to provide an optimal range of essential amino acids apart from B vitamins and iron (Kondaiah, 2008). Average daily animal protein intake in developing countries is only 15 g compared to 60 g in developed countries and for India it is 10 g compared to world average of 20 g. Expert committee of ICMR has recommended 60 g of protein per day with net protein utilization of 65.

The livestock and livestock products consumption pattern are the deciding factor for the development of livestock sector in general and a specific enterprise in particular. Prominent among the poultry species neglected by the established poultry operators and the local farmers in India is the duck. It is the yet uncultivated, good source of animal protein, B vitamins and iron in the country. Furthermore, ducks can be maintain on low-cost diets and can be used to control weeds in the agricultural fields. In spite of these benefits, most commercial and backyard poultry farmers do not consider duck farming to be a profitable venture in India. The information on duck and duck products consumption pattern will be of much use in planning the location specific and species based farming, slaughter and meat processing plants. With this objective the present study was carried out to analyse the

consumer acceptability, demand, consumption pattern, constraints against consumer preference and the general attitude towards duck and its products consumption in Kerala.

MATERIALS AND METHODS

An ex post facto research design was adopted to study the consumption pattern of duck and duck products among randomly selected people of Palakkad district of Kerala in India. It is suitable design which envisages that the scientist does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulated (Kerlinger, 1973). It was carried out by a well structured and pretested questionnaire which was distributed randomly to about 285 consumers (165 males and 120 females) of different categories viz., school teachers, government officers, business people, school students and consumers aged between 17-50 years old spread all over Kerala. The data pertaining to respondent's personal, socio-economic and consumption behavior was collected using a pre-tested interview schedule. The collected data were analyzed using d base IV and the χ^2 -test was further used to determine the level of significance difference at 5% confidence and the results are presented in the table accordingly.

RESULTS AND DISCUSSION

Personal and socio-economic characteristics: The data on the personal and socio-economic characteristics of the respondents are shown in Table 1. It was noted that the majority (37.54%) of the respondents were young (<30 years) followed by 32.63% (between 30-40 years) and the remaining 29.82% were old age groups. About one third (30.18%) of the respondents possessed degree and middle level of education each while a meager 13.33% had education up to primary school and the rest up to secondary level education (26.32%). However, 31.58% respondents were employees, 26.32% were student, 19.30% were businessman, 9.82% were involved in mixed farming, 6.67% as house wives and the remaining 6.32% involved in agriculture.

Meat consumption patterns: The data on consumption pattern of meat and meat products of people of Kerala are shown in the Table 2.

It was found that the 34.74% of the respondents started eating duck and duck products during their childhood onwards, about 53.68% during their young

Table 1: Details on personal and socio-economic characteristics of respondents

Categories	No. of respondents (N = 285)	Frequency (%)
Young (<30 years)	107	37.54
Middle age (30-40 years)	93	32.63
Old (>40 years)	85	29.82
Education	285	100.00
Primary	38	13.33
Middle	86	30.18
Secondary	75	26.32
Degree and above	86	30.18
Occupation	285	100.00
Agriculture	18	6.32
Mixed farming (Agri+AH)	28	9.82
Employees	90	31.58
Business	55	19.30
Student	75	26.32
Others (House wives)	19	6.67
Salary	285	100.00
<Rs.100,000/-	85	29.82
1-3 lakhs	74	25.96
Above 3 lakhs	33	11.58
Not willing to answer	93	32.63
Marital status	285	100.00
Married	180	63.16
Unmarried	105	36.84
Religion	285	100.00
Hindu	120	42.11
Christians	60	21.05
Muslims	105	36.84
Total	285	100.00

(<17 years) age, a meager 2.83% after their 17 years of age and 8.77% of the respondents not known clearly. The consumption patterns of respondents of Kerala showed that the most preferred meat was chicken (33.33%) followed by quail (22.11%), duck (21.05%), fish (9.82%), chevon (6.67%), mutton 4.57%, beef (1.05%), turkey (1.05%) and the least of pork (0.35%). Among 285 respondents no one showed first preference to pork however they consume pork (gave eighth preference). Koizumi *et al.* (2001) reported similar results. The reasons attributed for their preference were habit (56.14%) not liking other species (18.25%), cheap (13.68%), medicinal value (8.42%) and with out any other reason (3.51%). So, the individual habituated is the key factor for their species preference of chicken/quail/duck/mutton/fish (Raju and Suryanarayanan, 2005). In the present study, less number of respondents showed preference to beef and pork. This may also be due to habituated, not religious restrictions and health consciousness. It is well established fact that religious sanctions restrict Hindus (a dominant religion in India) to consume beef and Muslims to consume pork. The chicken meat was the most preferred meat followed by quail and duck may be due to low cost compared to mutton and chevon. So, the chicken, quail and duck has more market potential. In order to meet the demand, the broiler production has to be

Table 2: Distribution of respondents according to their meat consumption pattern

Consumption pattern (Categories)	No. of respondents (N = 285)	Frequency (%)	Consumption pattern (Categories)	No. of respondents (N = 285)	Frequency (%)
Age at which started eating duck and duck products			Both		
As child	54	18.95	Egg gravy	83	29.12
Young	45	15.79	Boiled egg	45	15.79
<17 years	153	53.68	Omelet	65	22.81
After 17 years	8	2.81	Egg podimas	34	11.93
Not known	25	8.77	Full boil/Half boil	58	20.35
Total	285	100.00	Total	285	200.00
First preference to species			Place of eating		
Chicken	95	33.33	Hotel	21	7.37
Quail	63	22.11	Home	254	89.12
Duck	60	21.05	Both	10	3.51
Chevon	19	6.67	Total	285	100.00
Fish	28	9.82	Frequency of consumption		
Mutton	13	4.57	Once in a week	179	62.81
Turkey	3	1.05	Twice in a week	59	20.70
Pork	1	0.35	Thrice in a week	18	6.32
Beef	3	1.05	more than thrice	9	3.16
Total	285	100.00	Not at all	20	7.02
Reason for species wise preference			Total	285	100.00
Habituated	160	56.14	Degree of likeness		
Medicinal value	24	8.42	Liked extremely	95	33.33
Cheap	39	13.68	Liked	93	32.63
Not liking other species	52	18.25	Liked moderately	65	22.81
No reason	10	3.51	Liked slightly	12	4.21
Total	285	100.00	Dislike	20	7.02
Familiarity with duck meat			Total	285	100.00
Have you seen duck meat before?			Sensory comparison of duck over chicken meat		
Yes	223	78.25	Tastier	175	61.40
No	63	22.11	Tougher	45	15.79
Have you tasted duck meat before?			Preference	65	22.81
Yes	186	65.26	Total	285	100.00
No	99	34.74	Place of purchase meat		
Do you eat duck meat regularly?			Corporation slaughter house	13	4.56
Yes	145	50.88	Road side shop	252	88.42
No	140	49.12	Hygienic meat shops	20	7.02
Frequency of duck egg and meat consumption			Total	285	100.00
Weekly once	168	58.95	Availability of good quality duck meat products		
Twice in a week	57	20.00	Not all the times	155	54.39
Once in 15 days	34	11.93	Always	64	22.46
Once in a month	21	7.37	No	66	23.15
Rarely	5	1.75	Total	285	100.00
Total	285	100.00	Availability of different ready to eat duck meat products		
Quantity of duck products (egg/meat) consumed per week			Yes	75	26.32
100-200 g	234	82.11	No	210	73.68
200-300 g	46	16.14	Total	285	100.00
300 g and above	5	1.75	Factors limiting duck meat consumption		
>7 eggs	153	53.68	Cost	125	43.85
<7 eggs	132	46.32	Availability	94	32.98
Preference over type of preparation			Perceived as dirty	62	21.75
Gravy	170	59.65	Not familiar	4	1.4
Fry	113	39.65	Total	285	100.00

increased accordingly. The respondents also preferred chevon and fish to some extent. Income, age, family size and ethnic factors did affect the purchase of meat according to Goodwin and Koudele (1990).

Majority of respondents consumed meat weekly once (58.95%), twice in a week (20%), once in a fortnight (11.93%), once in a month (7.37%) and rarely (1.75%). A similar trend was observed in Andhra Pradesh also (Raju and Suryanarayanan, 2005). So, the factors such as

the occurrence of specific occasions individual's choice, liking and the purchasing power decides the frequency of meat consumption. Out of 285 respondents about 78.25% have seen duck meat while the rest 22.11% responded negatively. Where as 65.26% of the respondents tasted the duck meat and the rest (34.74%) did not. With respect to eating of duck meat regularly 50.88% respondents showed positive response and the rest (49.12%) revealed negative response.

Assessment on the frequency of duck and duck products consumption revealed that 58.95% of the respondents consumed weekly once, 20.0% of the respondents consumed twice in a week, 11.93% once in 15 days, 7.37% respondents eat once in a month and 1.75% respondents eat rarely. With regard to quantity of duck and duck products consumed per week revealed that majority (82.11%) of the respondents consumed 100-200 g of meat while 16.14% of the respondents consumed between 200-300 g and a meager 1.75% consumed >300 g of meat at weekly interval. This is in contrary to the report of Shanmugam and Kosalaraman who found that about one-half of the respondents (52%) consumed 500-749 g of broiler meat at a time. Where as 53.68% of the respondents consumed >7 eggs per week and the rest 46.32% consumed <7 eggs per week.

The Indian style of cooking meat is different from that of other countries. Generally Indian people prefer more spices, chilies in the preparations in the form of gravy and fry. In the present study, majority (59.65%) of the respondents prefer the dish in the form of gravy, 39.65% preferred fry while the rest of the respondents, 0.7% preferred both. Similar observations were made by Raju and Suryanarayanan (2005). Similarly 29.12% respondents prefer egg gravy followed by 22.81% prefer omelet, 20.35 people preferred full boil/half boil, 15.79% people preferred boiled egg and 11.93% respondents preferred egg podimas.

With regard to place of eating/consumption, from the Table 2 it could be noted that majority (89.12%) of the respondents preferred to consume duck and duck products prepared at from their home while 7.37% consumed at hotel and the rest (7.37%) preferred to consume both in hotel and home. The above observations were almost similar to the findings reported by Thilakar and Sudeepkumar (2005). In this study about two third of the respondents (69.81%) consumed duck and duck products once in a week, 20.70% consumed twice in a week, 6.32% thrice in a week, a meager 3.16% consumed duck and duck products more than thrice and the rest (7.02%) not at all.

While looking in to place of duck meat purchasing, most of the respondents (88.42%) purchased meat from road side shop followed by other sources (7.02%) and corporation slaughter house (4.56%). The above observation was in contrary to the one noted by Raju and Suryanarayanan (2005). This may be due to lack of knowledge of the respondents on the hygiene and non availability of the clean meat shop.

In the present study about 58.25% of the consumers reported that the good quality duck products are not available at all the times. Whereas, 22.46% of the consumers replied positively while 19.64% of the consumers answered no. Similar trend was noticed for the availability of good quality meat products. This observation is in line with the findings of Raju and Suryanarayanan (2005) who found that chicken, mutton or fish were available only on a specific day of the week particularly on Sunday as expressed by 47.5% of the respondents.

The awareness of the respondents about the availability of different ready to eat duck meat products like croquet, sausage, nuggets, patties and samosa, etc. was also analyzed in this study. The result revealed that majority (73.68%) of the respondents were not aware of the availability of different ready to eat meat products while the rest (26.32%) aware of it. This is supported by the findings of Raju and Suryanarayanan (2005) who found that the rural consumers (65%) were not in favor of processed food and they are habituated to eat fresh meat (70%). On the contrary, most of the consumers of Korea purchased the processed meat products such as ham and sausages products once in a month (Cho *et al.*, 2003).

The study also revealed that there are certain definite constraints limiting duck meat consumption and these include cost of duck meat compared to chicken (43.85%), non availability (32.98%) and not familiar with duck meat (1.4%). Other factors found to influence duck and duck products consumption include the perception as dirty (21.75%).

CONCLUSION

From the study, it was concluded that the rural duck farmers, market agencies and extension organizations should take into account the various determinants such as preferences, choices, affordability, religious sentiments (particularly for beef and pork), culture, traditions, customs, taboos are influencing the consumption pattern of duck and duck products in Indian societies. Awareness on the advantages of consuming duck and duck products and its nutritive value has to be created by the extension and marketing agencies.

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