

# PROMOTING ANIMAL WELFARE FROM THE RETAILERS FRIDGE: CUE ATTRIBUTES LINKED TO PURCHASE OF FRESH CHICKEN MEAT

H. Brisk<sup>1</sup>, H. H. Kristensen<sup>2</sup>, C. G. Dandanell<sup>1</sup>, A. H. Karlsson<sup>1</sup>, F. J.A. Perez-Cueto<sup>1</sup>, and W.

L.P. Bredie<sup>1</sup>

<sup>1</sup> University of Copenhagen, Department of Food Science, Rolighedsvej 26, 1958 Frederiksberg C, Denmark

<sup>2</sup> University of Copenhagen, Department of Large Animal Sciences, Grønnegårdsvej 8, 1870 Frederiksberg C, Denmark

Consumers base their food choices in several aspects of the products. The aim of the present study was to elucidate which attributes are important for consumers when they are buying fresh chicken meat. A convenience sample of 203 Danish consumers completed an on-line survey. The results indicate that *freshness* was the most outstanding cue factor when selecting chicken meat. Experience attributes as *appearance, smell, texture and taste*, as well as other factors including *price, durability, sustainability and information of production* were also rated important for the consumers. Furthermore, *animal welfare, organic production and free from salmonella* were important, but ratings had a wider range than the above-mentioned factors; thus indicating different levels of importance given to these attribute cues. Since expectations for sensory factors including freshness were most salient, these findings indicate some challenges for marketing strategies aiming to promote health, sustainability and animal welfare in consumer choices.

**Key Words – Broiler chicken, survey, quality, animal welfare.**

## I. INTRODUCTION

Consumption of broiler chicken is steadily increasing worldwide (1). It is essential for broiler chicken industry to know which aspects consumers emphasize most when selecting products in order to match consumers' expectations and to design marketing strategies. Consumers' select food products based on intrinsic- (part of the physical product) and extrinsic quality cues (not a part of the physical product e.g. price, country of origin and packaging) (2,3). Apart from these two cues, consumers are influenced by experience quality attributes (e.g. taste and freshness), which cannot be determined

prior to consumption, and credence quality attributes (e.g. animal friendliness and healthiness), which need to be communicated to consumers (2). Broiler chicken industry should mind credence quality attributes in their marketing strategies, since these quality attributes have an impact on expected likings of the food. In a blind test, participants liked conventionally produced chicken meat better than organic chicken meat, but when information about the production system was provided, participants liked better the organic chicken meat (4). Consumers perceive a high standard of animal welfare as an indicator of safety and healthiness of food (5,6). However, there seems to be a gap between attitude and behavior meaning that people as citizens are concerned about animal welfare, but people as consumers do not act accordingly to their beliefs when purchasing meat products (7). It may be questioned whether the attitude and behavior could have stronger relation if more products clearly positioned with regard to small farming, animal welfare and environmental impact.

The aim was to investigate which attribute cues are important for consumers when they are buying fresh chicken meat. Specifically the aim was to investigate how organic chicken production, animal welfare and sustainability of the product were rated among other factors.

## II. MATERIALS AND METHODS

The present study is a part of a multidisciplinary project: Sustainable broiler production in Denmark. We conducted an online survey in December 2014. Respondents were contacted through a consumer database at the University of Copenhagen, Department of Food Science. Besides socio-

demographic information respondents were asked to score importance of several attributes when they are buying fresh chicken meat. Attributes were categorized as a) experience, b) extrinsic quality cues and c) credence attributes. Consumers rated the importance on a five-point scale ranging from 'Not at all important (1)' to 'Very important (5)'. For descriptive statistics, we calculated medians and interquartile range (IQR), because the data was not normally distributed.

### III. RESULTS AND DISCUSSION

In total, 203 consumers completed the questionnaire. Participants had mean age of 40 years (SD 14.7 years) and 56% were females and 44 % were males. The most common household consisted of one or two adults (84%), 61% had no children, and 22% had one or two children. Most of the participants had a higher education and 80% lived in the Capital region (Table 1).

Table 1. Socio-demographic characteristics of the respondents.

Item	Level	Number	%
Gender	Female	113	56
	Male	90	44
Age (year)	18-30	73	36
	31-45	62	31
	46-60	43	21
	>61	23	11
Geographical area in Denmark	Zealand <sup>a</sup>	190 <sup>b</sup>	94
	Fyn and the islands	1	0.5
	Jutland	11	5.5
Adults (18 yr. and over) in the household	0	12 <sup>c</sup>	6
	1	59	29
	2	112	55
	3	9	4
	4	6	3
	5 or more	2	1
Children (<18 yr.) in the household	0	124	61
	1	21	10
	2	22	11
	3	3	2
	4	1	0.5
	5 or more	2	1
Education	Lower secondary school	5	3
	Upper secondary school	24	12
	Upper secondary school with trainee	17	8
	Short length higher education	19	9
	Medium length higher education	59	29
	Long higher education	79	39

<sup>a</sup> Zealand and the Islands: Lolland, Falster and Møn.

<sup>b</sup> 163 (80%) participants lived in the Capital region.

<sup>c</sup> Apart from the respondent, no other adults living in the same household.

The consumers buy fresh chicken meat based on several attribute cues. The consumers set greatest importance for *freshness* of the chicken meat. *All experience attributes, and the extrinsic attributes of price, durability, and credence attributes of sustainability and production information* were also important for consumers. *Organic production, animal welfare and free from salmonella* had as high median scores as the above-mentioned attributes, but interquartile ranges (IQR) were wider (Table 2.). This indicated that the consumers were less consistent with the importance given to organic, animal welfare and food security in the broiler chicken production.

Table 2. Importance of attributes associated to fresh chicken meat purchase on a 5-point scale.

Category	Factors	Median	IQR
Experience	Appearance	4	1
	Smell	4	1
	Texture	4	1
	Freshness	5	1
	Taste	4	1
Extrinsic	Fat percentage	3	2
	Price	4	1
	Locally produced	3	1
	Organic	4	2
	Durability	4	1
Credence	Packaging	3	2
	Inspiration/recipes on the package	1	1
	Animal welfare	4	2
	Sustainability	4	1
	Labels e.g. Danish "Keyhole"	3	2
	Information of production	4	1
	Free from Salmonella	4	2

The least important factor was *inspiration/recipes on the package* (md=1). Also other cues such as *packaging* and *labels* were not perceived important. The present results suggest that consumers consider that information of production is an important factor for their final purchase decision. Production information on the package may be more beneficial than inspiration/recipes on

the package and diverse labels. Previous research shows that organic logo with details was better understood than the logo alone (8). Furthermore, well-established labels have positive impacts while less familiar labels can be counter-productive (9). Some of the information presented by logos e.g. organic, keyhole in DK is aimed to inform consumers about sustainability, animal welfare and healthiness of the product. In the light of the present results, we suggest that it might be beneficial to include details along with the logos (e.g. organic logo, keyhole) to enable consumers to choose a product that is in line with their personal values and to also weight the impact on the environment that their food choices may have. However, additions contributing to a cacophony of information should be done carefully, since they are likely to bring confusion to consumers instead of actual empowerment (10).

#### IV. CONCLUSION

The present study suggests that consumers perceived several attribute cues as important when buying fresh chicken meat. Consumers perceived *freshness as the most salient factor*. Other experience attributes such as *appearance, smell, texture and taste were important* together with *price, durability, sustainability and information of production*. Although, consumers gave importance to *animal welfare, organic production and free from salmonella*, the ratings were less consistent. *Labels, packaging and inspiration for cooking* scored lower.

The results indicate that details of broiler chicken production are important for consumers. Future studies should investigate whether detailed production information impact consumers purchase choices and factors such as organic production, animal welfare, sustainability and food security.

#### ACKNOWLEDGEMENTS

This work was financially supported through the project “Sustainable broiler production based on feeding with ensilaged maize” funded by the GUDP program (grant nr. 34009-12-0479).

#### REFERENCES

1. OECD-FAO. (2014) Agricultural Outlook.173-188.
2. Oude Ophuis PAM, Van Trijp HCM. (1995) Perceived quality: A market driven and consumer oriented approach. Food Quality and Preference 6 (3):177-183.
3. Grunert KG. (2006) Future trends and consumer lifestyles with regard to meat consumption. Meat Science 9;74(1):149-160.
4. Napolitano F, Castellini C, Naspetti S, Piasentier E, Girolami A, Braghieri A. (2013) Consumer preference for chicken breast may be more affected by information on organic production than by product sensory properties. Poultry Science 92:820-826.
5. Harper GC, Makatouni A. (2002) Consumer perception of organic food production and farm animal welfare. British Food Journal 104(3/4/5):287-299.
6. Padel S, Foster C. (2005) Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food. British Food Journal 107(8):606-625.
7. Krystallis A, de Barcellos MD, Kügler JO, Verbeke W, Grunert KG. (2009) Attitudes of European citizens towards pig production systems. Livestock Science 126(1):46-56.
8. Hoogland CT, de Boer J, Boersema JJ. (2007) Food and sustainability: Do consumers recognize, understand and value on-package information on production standards? Appetite 7;49(1):47-57.
9. Pouta E, Heikkilä J, ForsmanHugg S, Isoniemi M, Makela J. (2010) Consumer choice of broiler meat: the effects of country of origin and production methods. Food Quality and Preference 21(5):539-546.
10. Federico JA Pérez-Cueto, Laurits Rohden Skov and Bent Egberg Mikkelsen (2013). Nutrition labelling, environment, sustainability. Public Health Nutrition, 16, pp 1908-1909. doi:10.1017/S1368980013000724.