Effect of algae and pea protein on carcass quality (breast meat yield), meat quality, shelf life, and consumer acceptance – Results from practical trials

Anissa Xin Hui Lee[1], Wender LP Bredie[1], Belinda Lange[1], Sanna Steenfeldt[2], Jette Søholm Petersen[3], Sarah Støjer Sällberg[3]

1: Department of Food Science, Section for Food Design and Consumer Behaviour, University of Copenhagen, Frederiksberg C, Denmark.
2: Department of Animal and Veterinary Sciences, Monogastric Nutrition and Centre for Circular Bioeconomy, Foulum, Aarhus University, Denmark.
3: SEGES Innovation P/S, Livestock, Aarhus, Denmark

Preface

This is an official report, being a part of the ProLocAL project supported by the Danish Organic RDD7 program, coordinated by ICROFS, by a grant from GUDP under the Danish Ministry of Food, Agriculture and Fisheries. A thank you to Rokkedahl, Danish Technological Institute, and Innovation for Organic Farming for the contributions to the study.

Table of contents

ABSTRACT

Microalgae and pea protein show promise as sustainable alternatives to soy in organic chicken feed. This study examined consumer perceptions of organic broiler chickens raised on three grower feed diets containing different protein sources: (A) soybean and pea, (B) microalgae and pea, and (C) pea. A total of 122 consumers were recruited and participated in this study, and 176 chickens were cut up for carcass evaluation. While consumers had an equal preference for the appearance, taste, and texture of the cooked chicken samples, younger consumers (18-49 years, n=50) preferred the microalgae-pea fed chicken (B) over soybean-pea chicken (A) ($p = 0.010$). The choice experiment indicated a preference for the appearance of the yellow microalgae-pea and pink pea fed chickens (B, C) over soybean-pea chicken (A) ($p < 0.001$). Younger consumers had a more positive perception towards microalgae fed chickens, particularly its taste, nutrition, and safety. Aside from the consumers, the carcass analysis showed a tendency of enhanced growth and breast meat yield (%) for the chickens fed the microalgae-pea diet, compared to the control ($p = 0.025$). In conclusion, the microalgae fed chickens had a higher breast meat yield (%) than the soybean fed and Danish consumers appear receptive to organic chickens raised on microalgae-supplemented feed.

1. INTRODUCTION

Microalgae and pea supplements in feed pellets for broilers may be a promising alternative to protein sources in conventional organic feed. These alternatives show potential to replace soy protein, while maintaining a high protein quality in the diet and reducing the climate impact. Furthermore, microalgae are a source of carotenoids and previous research has shown the carotenoid content to increase, offering consumers a more yellow orange coloured chicken meat. This study aimed to evaluate consumer perceptions of organic broiler chickens raised on three types of organic feeds, under realistic growth conditions. Additionally, investigating the carcass quality, meat yield, and shelf life. The experimental grower feeds focused on three different protein sources: (A) Soybean and pea protein, (B) Sc*enedesmus sp.* microalgae and pea protein, and (C) Pea protein. Chickens raised on these feeds showed a good productivity as described by Petersen et al. (2025).

2. METHODS

The study recruited 122 consumers in the area of the capital of Copenhagen based on the following criteria: (1) residing in Denmark for at least five years, (2) consuming chicken at least once a month, and (3) being active adults aged between 18 and 79 years. The criteria were set to focus on the local Danish adult population to assess their acceptance of organic microalgae-pea-fed chicken. The study was designed to include four sections: (1) Questionnaire on consumer background information, (2) Hedonic test to evaluate three types of oven-roasted chicken breast with skin samples, (3) Questionnaire on consumer perception of experimental chicken and willingness to pay, (4) carcass evaluation, to determine the meat yield. All questionnaires were designed and completed on Compusense®. The participants were served all three chicken types at the same time on white ceramic plates, randomized with three-digit number codes to ensure unbiased assessment (Figure 1).

Figure 1: The setup of the three cooked chicken samples that were served to consumers during the hedonic test.

An online choice experiment was conducted after the consumer test to simulate a shopping choice situation. Participants were presented with images of two whole raw experimental chickens (Figure 2), across three randomized sets, to assess their preference for appearance of the experimental chickens.

Figure 2: Images of the raw experimental chickens used in the online choice experiment. From left to right: chicken A (soy and pea), chicken B (microalgae and pea), and chicken C (pea).

For the carcass evaluation 176 chickens were cut up and weighed, to enable analysis of meat yield. It was 59 chickens from the control group fed soybean-pea (A), 59 chickens fed microalgae-pea (B), and 58 chicken fed peas (C). This analysis, with data computed in the software program R, focuses on the percentage of breast meat yield for all three experimental chicken groups.

3. RESULTS

The population suitable for participating in the questionnaires was divided into younger adults (18-49 years, n = 50) and older adults (50-79 years, n = 72). Older adults consumed chicken less frequently than the younger group ($p = 0.002$), however, both groups cooked chicken at home with a similar frequency (Figure 3). Older adults were more likely to live alone or with just their partner and typically consumed chicken less often, most commonly once a week or a few times a month ($p < 0.001$). In contrast, younger adults had more diverse household arrangements, and no clear pattern emerged between their household composition and chicken consumption frequency ($p = 0.620$).

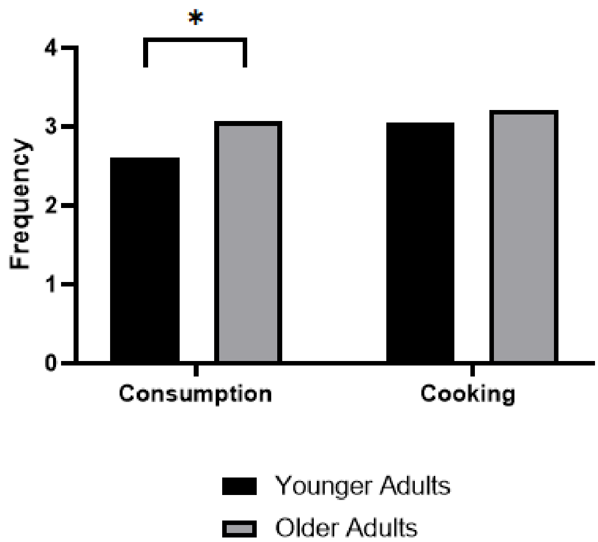

Figure 3: Graph illustrating the frequency of consumption and cooking of chicken at home among the younger and older consumers. The frequency scale was categorized as: 1 = once a day or more, 5 = 1 to 3 times a month; a higher number on this scale corresponds to a lower frequency. Asterisk star indicates statistical difference between age group ($p < 0.05$).

3.1. Hedonic test and choice experiment

The hedonic test showed that consumers generally liked all three types of cooked chicken. There were no significant differences in the liking of appearance, taste, or texture between the three types of chicken or across different age groups. However, younger consumers had a significantly greater overall liking for the microalgae-pea fed (B) compared to the soybean-pea fed (A) chickens ($p = 0.010$). This may be explained by younger consumers eating chicken more frequently, making them more adept at distinguishing between the samples.

Table 1: Average Hedonic scores for the liking of appearance, taste, texture and overall liking of the three types of chicken

Liking of chicken	Younger Adults (18-49)			*p*-value	Older Adults (50-79)			*p*-value
	A	B	C		A	B	C	
Appearance	2.68	2.82	2.64	0.284	2.75	2.76	2.71	0.844
Taste	2.76	2.72	2.82	0.712	2.72	2.60	2.65	0.556
Texture	2.48	2.56	2.60	0.754	2.58	2.46	2.60	0.504
Overall	2.56^{b}	2.88^{a}	$2.74^{a, b}$	0.048*	2.65	2.53	2.69	0.364

Hedonic scores were categorized as: 1 = dislike, 2 = neutral, 3 = like. Different superscript letters in a row indicate significant differences between the chicken type ($p < 0.05$).

As the appearance of the cooked chicken was perceived to be similar across the different samples, the choice experiment evaluated consumer preference based on appearance of the raw chicken meat. Unlike the hedonic test results, the choice experiment revealed that consumers had a greater preference for the yellow appearance of the microalgae-pea, and pink colour of the pea-fed chickens (B, C) over the soybean-pea chicken (A) ($p < 0.001$) (Figure 4).

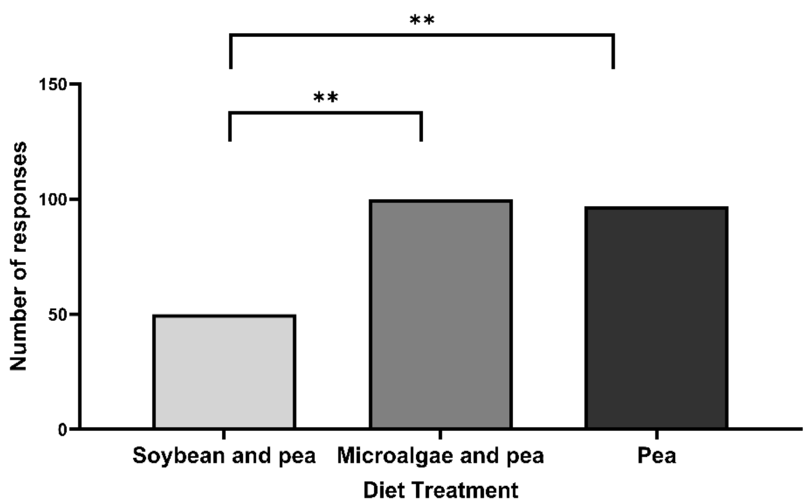

Figure 4: The total count of consumers' responses for each chicken type from the choice experiment. Asterisk stars indicate significant differences are detected between the samples (p = 0.001).

3.2. **Consumer attitudes and willingness to pay**

Younger consumers were willing to pay higher prices for both conventional ($p < 0.001$) and experimental chickens ($p = 0.30$), compared to older consumers (Figure 5). On average, younger adults were willing to pay a maximum range of 80 and 100 DKK, whereas older adults were willing to pay around 60 and 80 DKK.

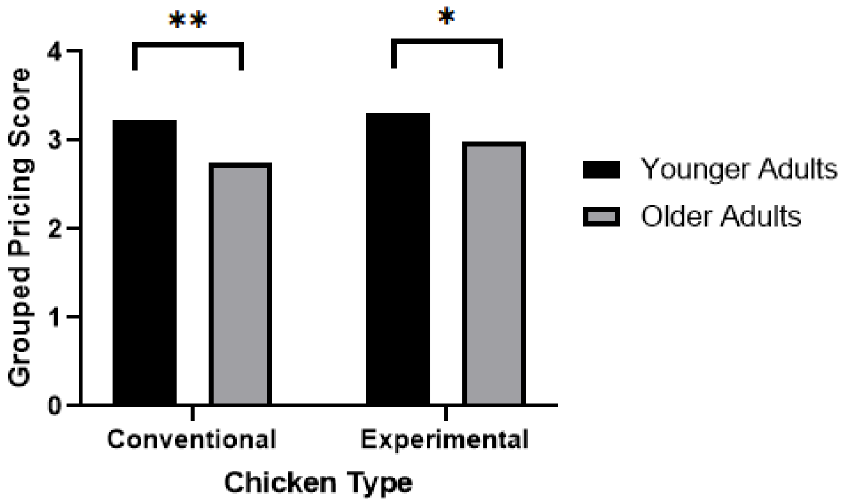

Figure 5: The average scores for the maximum price consumers are willing to pay for conventional and experimental chicken. The scale was categorized as: 1 = 40 DKK, 6 = 140 DKK, with a 20 DKK increase between each option.

When examining the factors that influence consumers' decisions to purchase fresh whole chicken, significant factors identified were taste, colour, nutritional content, packaging, animal welfare, and environmental impact. Older adults placed greater importance on these factors than younger adults ($p < 0.05$), with the most significant differences observed in their consideration for the chicken's nutritional content ($p = 0.001$) and environmental impact ($p < 0.001$).
Consumer opinion on microalgae was generally neutral (Figure 6 & 7); however, younger consumers had a more positive perception of the tastiness, nutrition, and safety of microalgae-fed chicken, compared to the older group ($p < 0.001$). The highest scores were for the safety of microalgae-fed chicken in both younger (5.74) and older (4.97) adults, indicating a generally positive perception towards microalgae supplemented feed.

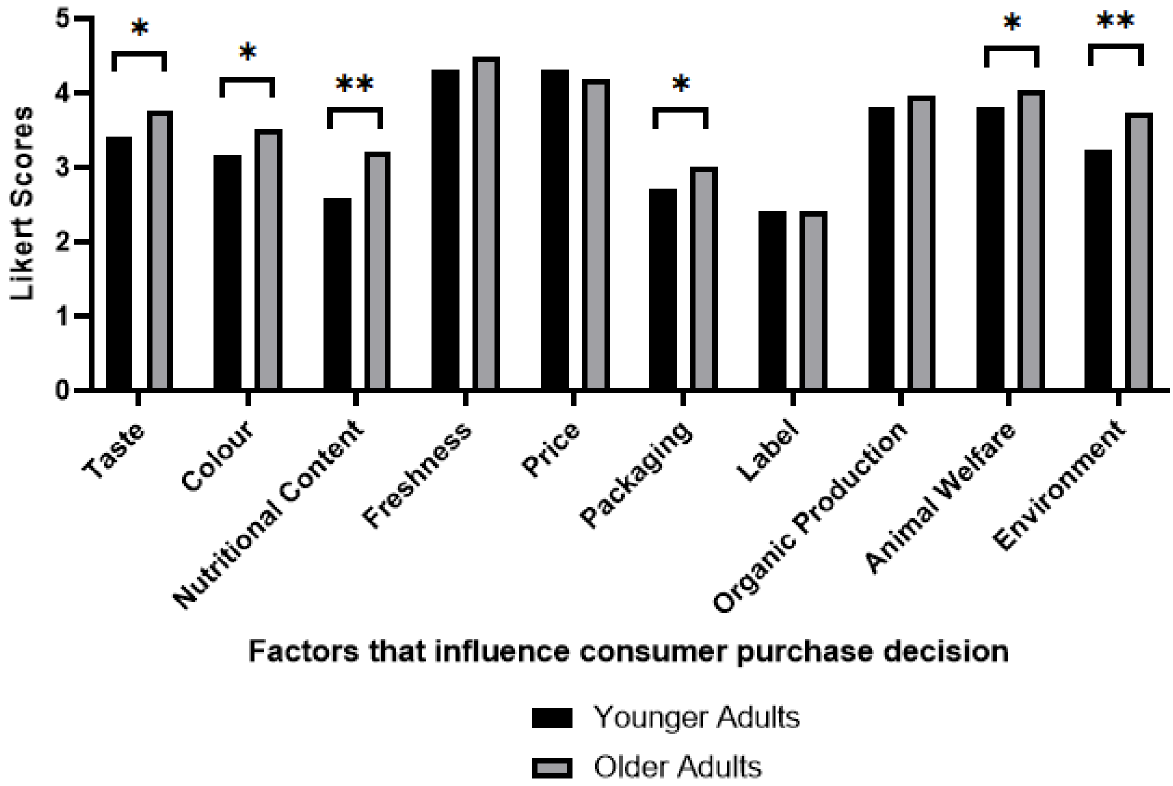

Figure 6: Graph showing average Likert scores of the factors that influence consumer decision when purchasing fresh chicken. Maximum score on Likert scale 5 = Always consider it, minimum score 1 = Never consider it.

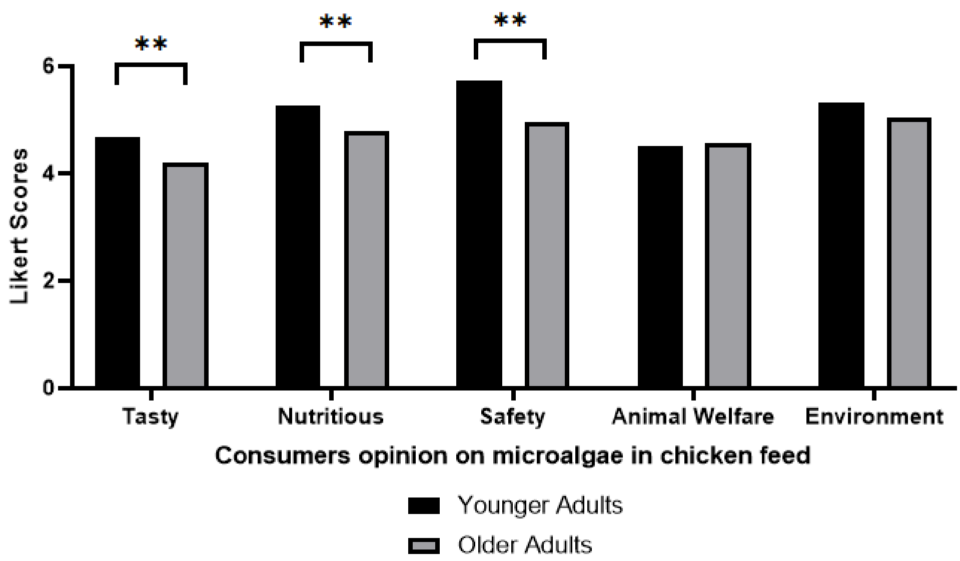

Figure 7: Graph detailing average Likert scores on consumer opinion of microalgae-fed chicken. Maximum score on the Likert scale 7 = strongly agree, minimum score 1 = strongly disagree, and neutral point = 4.

3.3. Carcass evaluation, breast meat yield and shelf life

Meat quality of microalgae-pea fed chickens was evaluated in a previous trial conducted by Steenfeldt, S. & Pedersen, J. S. (2025), with chickens fed four diets of microalgae-pea protein: (A) 0%, (B) 6% with 1.2% microalgae, (C) 12% with 2.4% microalgae, (D) 18% with 3.6% microalgae. None of the four groups showed a significant effect on fatty acid composition, but there was a tendency for higher levels of EPA (Eicosapentaenoic acid), DHA (Docosahexaenoic acid), and SFA (saturated fatty acids). Areas that had a significant effect was (1) colour, which was more yellow in breast and skin, with elevated microalgae content, (2) Flavour, which was more like toasted seaweed with elevated microalgae content, (3) carotenoid content: Lutein, Zeaxanthin, beta carotene was elevated with higher content of microalgae, (4) The green colour pigments Chlorophyll and Pheophytin was higher was elevated microalgae content. At the highest concentration of 18% microalgae-pea (3.6% microalgae) there was a negative change in juiciness, which was reduced.

For the chickens in the previous trial (Steenfeldt, S., & Pedersen, J. S., 2025), group A and D was evaluated on shelf life, by investigating hexanal, heptanal, nonanal, (E,E)-2,4-Decadienal, 2,5-Dimethylpyrazine, 2-Furanmethanol, and 2-Methylbutanal levels. These are indicators of freshness and spoilage. The first four parameters were higher in treatment D than treatment A, while the last 3 parameters were lower in treatment D than treatment A (Bredie, W., & Lange, B., 2025). This suggests higher risks of spoilage in treatment D, meaning a shorter shelf life.

The general carcass evaluation in this study indicates that the microalgae-pea (B) performed better than the control (A) and the pea (C). The microalgae-pea (B) fed chickens had the highest average of cold carcass weight (1.489 g), while the pea (C) fed chickens had the lowest (1.355 g). Furthermore, the microalgae-pea (B) had the highest carcass yield (77.5 %), with the pea (C) having the lowest carcass yield (73.7 %). The leg yield was the same across all experimental groups (32 %). The breast meat yield was additionally higher for the microalgae-pea (B), being 29.94 %, compared to the control (A) being 29.04 % ($p = 0.025$). However, for the pea (C) breast meat yield was lower, having a percentage of 28.34 %, compared to the control (A) having 29.04 % ($p = 0.130$).

Table 2: An overview of the carcass composition for the three experimental chicken groups. Breast meat yield in percentage has been statistically analysed, while other data is raw.

	Control	Algae/peas	Peas	All groups
Average cold carcass weight, g	1438	1489	1355	
Breast yield, %	29.04	29.94	28.34	
Leg yield, %	32	32	32	
Carcass hull (% of carcass weight)	39	38	40	
Average estimated live weight, g	1887	1921	1838	
Carcass yield, %	76.2	77.5	73.7	
Cold carcass weight, g				1427
Carcass yield, %				75.82

4. DISCUSSION

The hedonic test revealed that consumers did not have a clear preference between the cooked chicken samples in terms of taste and texture. These findings align with previous studies, which reported no significant flavour differences between chicken breast samples from various alternative feed ingredient diet groups (Cullere et al., 2019; Altmann et al., 2022). This suggests that alternative feed ingredients may have little impact on meat flavour. However, the findings of Roccatello et al. (2024) reported that two texture attributes 'juicy' and 'dry', were distinguishing factors between chicken breast samples. A key factor to consider is the cooking method used in Roccatello et al. (2024). They opted for vacuum-sealing the breast meat samples and cooking them sous-vide, a method that helps retain moisture and enhances juiciness. This difference in preparation could have made texture variations more pronounced, making it easier for an untrained panel to detect differences between samples. Hence, the cooking method for chicken meat should be considered, as it can influence consumers' evaluation and preference for the texture of the meat.

In contrast to the neutral response to taste and texture, the choice experiment revealed clear consumer preferences based on the colour of raw chicken meat. Consumers favoured both the yellow microalgae-pea (B) fed, and the pink pea (C) fed chickens, compared to the control (A). Rocatello et al. (2024) reported that their respondents perceived a more intense pink colour in samples from animals fed with Spirulina algae supplemented feed. Since a pink hue is generally preferred for raw chicken and greater colour uniformity leads to higher acceptance (Geronimo et al., 2022), this may explain the preferences for chicken C (pea-fed), which exhibited a more uniform pink flesh. Consumer preferences for poultry colour have also evolved over time. Sunde (1992) found that yellow flesh used to be viewed positively in chickens, as it supposedly indicated that the bird was relatively free from avian diseases, such as coccidiosis. The consumer acceptance of the variations in meat colour might however depend on cultural differences. In Altmann et al. (2023) three descriptions of chicken meat colour are referred to: pale, pinkish and yellow. A study conducted on sensory assessments in Northern Ireland found that yellow hue from chickens fed a corn-based diet, was unfamiliar, unnatural and something the consumer would not pick as a first choice (Altmann et al., 2023). Altmann et al. (2023) additionally found that in Brazil, a study compared pale to pinkish coloured chicken meat, where the pinkish were preferred to the pale meat. In contrast Wu, J. et al. (2021) found that in South China, the most popular choice is chicken meat with a golden yellow colour. The white or pale-yellow skin has a lower market price that that with golden yellow skin (Wu, J. et al., 2021). It is likely that the acceptance of meat colour is partially determined by how familiar the consumer is with the colour and what knowledge the consumer has about the reason for that colour chicken meat. The preference for yellow microalgae-pea fed chicken (B) in this study could be influenced by the culture from which the test person come from, but also generational differences. If a larger proportion of younger consumers (18-29 years) had been included, different results might have been observed, thus the consumer demographic should be carefully considered when marketing microalgae-fed chicken. While research on chicken colour has primarily focused on raw meat, further studies are needed to explore consumer preferences regarding the colour of cooked meat.

Beyond sensory evaluation, the study also examined consumer perception and willingness to pay. Younger adults demonstrated a greater willingness to pay a higher price for both conventional and experimental chickens. Van Loo et al. (2011) explained that habitual buyers of chicken were more willing to pay a premium than occasional or non-buyers. In the context of this study, younger consumers reported higher chicken consumption frequency, which may explain their willingness to spend more on both conventional and organic experimental chicken. Additionally, younger adults had a more positive perception of the taste, nutrition and safety of microalgae-fed chicken. Lafarga et al. (2021) also observed a generally positive consumer perception of the nutrition, safety and environmental benefits of microalgae. This could be attributed to the predominantly green colour of many microalgae, where green is often associated with health benefits (Schuldt, 2013). However, despite this positive perception, Lafarga et al. (2021) also identified a general lack of knowledge about microalgae, particularly regarding their nature, production, and potential applications as food. This potential knowledge gap may explain the overall neutral response to microalgae as a feed ingredient for chicken.

Substituting soybean protein with microalgae may enhance meat quality, due to microalgae having a high protein content, with adequate levels of the essential amino acid methionine and lysine, as well as vitamin, mineral and fatty acid content (Abdel-Wareth, A. A. A., et al., 2024). Peas, however, have a lower protein content, though still rich in lysine, which could impact the meat yield (Janocha, et al., 2022). This is reflected in the findings of this study, where the chickens fed microalgae-pea feed (B) had the highest cold carcass weight (1.489 g) and the pea (C) fed chickens had the lowest cold carcass weight (1.355 g), compared to the control (A) with 1.438 g. The carcass yield (%) moreover depicts this trend with the control, microalgae-pea, and pea fed chickens having a carcass yield of 76.2 %, 77.5 %, and 73.7 %, respectively. The microalgae feed has seemingly enhanced growth. Looking into the meat yield, the leg yield (%) was the same for all experimental groups (32 %). This is a normal leg yield for slow-growing birds (Weimer, S. L., et al., 2022), which was used for this study. However, there is a difference in breast yield (%) and statistical analysis was therefore performed. The control group (A) had a breast yield of 29.04 %, whereas the microalgae-pea group (B) had 29.94 % breast yield ($p = 0.025$), thus there is a significant effect of the microalgae-pea feed on breast meat yield. This is likely due to the enhanced meat quality mentioned by Abdel-Wareth, A. A. A., et al. (2024), along with how well the chicken can utilize the nutrients in the microalgae feed. *Spirulina platensis* and *Chlorella vulgaris* has shown to increase breast meat yield, for instance *Chlorella vulgaris* in feed for broilers with 1.55 g/kg as the inclusion level increased body weight gain 8%, simultaneously increasing breast meat yield by 5% (Abdel-Wareth, A. A. A., et al., 2024). It is therefore probable that the microalgae *Scenedesmus sp.* Can increase breast meat yield. The confidence intervals are somewhat broad (0.114 to 1.690), but since it is not a lot and statistical significance is apparent, it is possible to say that the microalgae-pea feed (B) has potential to substitute soybean products. Contrary to the effect of microalgae feed, the pea feed (C) resulted in a lower breast yield (28.43 %) than the control (29.04 %), however, this was not a significant difference (p = 0.130). There was variance in the effect of the pea feed, as the confidence intervals for breast yield span from -1.396 to 0.180, indicating that the value for breast meat yield could be negative and thus it is difficult to decide whether the pea feed (C) can be used practically, without researching further.

The shelf life of the microalgae fed chicken meat was conducted on group A and D from previous trials (Bredie, W., & Lange, B., 2025), meaning it does not entirely represent the meat produced in this study, but it might indicate a tendency, when including a high amount of microalgae. The higher levels of hexanal indicates faster oxidation in chicken D, as this is an indication of oxidative spoilage, thus likely a shorter shelf life. The higher levels of heptanal and nonanal in chicken D are lipid oxidation by-products, which reinforce the indication of greater oxidation in chicken D compared to A. (E,E)-2,4-Decadienal contribute to rancid flavours when oxidized and since levels are higher in chicken D compared to chicken A, it indicates faster spoilage. Overall, chicken D is significantly higher in oxidative spoilage markers, suggesting a short shelf life. Shelf life was not evaluated when microalgae concentrations were lower than 3.6%, although further investigations was done on microalgae concentrations at 2.26%. Therefore, the indication that the microalgae fed chickens have a shorter shelf life, might not be truly representative. Another study by El-Moustaqim, K., et al. (2025) found that the antioxidant effect of microalgae, which has also been demonstrated in Abdel-Wareth, A. A. A., et al. (2024), can improve the potential to inhibit lipid oxidation and thereby prolonging shelf life. Thus, it would be beneficial to conduct test on shelf life for the microalgae content inclusion used in this current study.

Although these findings provide valuable insights into consumer preference and carcass evaluations of the experimental chicken, this study had a few limitations that should be considered. The sample included only 122 consumers from the Copenhagen capital area, which may not be representative of broader Danish consumer preferences. Additionally, the online shopping simulation relied on images of raw experimental chickens, which may not fully capture real-world purchasing behaviour, where factors such as packaging and price comparisons play a significant role. Moreover, this study assessed immediate consumer reactions but did not evaluate long-term acceptance, repeat purchases, or broader market adoption. Future research should address these limitations by including a larger and more balanced consumer panel, incorporating real-world shopping conditions, and investigating long-term consumer behaviour and market potential. As for carcass evaluation a limitation is the sample size and having a bigger sample size, would likely make the confidence intervals less broad, thereby more reliable for decision making practically, concerning implementation of the experimental feed.

5. CONCLUSION

This study highlights the various factors influencing consumer preferences for experimental microalgae-fed and pea-fed chicken meat. While sensory evaluations of cooked chicken samples revealed no strong preferences for taste or texture, the visual appearance of raw meat played a crucial role in shaping consumer choices. The preference for microalgae-fed and pea-fed chickens suggests that colour remains an important purchase factor, possibly linked to perceived quality. The study also underscored the role of consumer demographics in purchasing behaviour. Younger consumers demonstrated a greater willingness to pay, and a more positive perception of microalgae fed chicken. The microalgae fed chickens had improved yellow colouration of the meat and toasted seaweed flavours. The increased carotenoids and chlorophyll content provided nutritional benefits, however, the shelf life was reduced for the chickens fed the highest amount of microalgae (3.6%).
The carcass yield and breast meat yield were improved for the chickens' fed microalgae, demonstrating a tendency that would be interesting to investigate further, if the consumers acceptance is adequate. The overall neutral response to microalgae suggests a knowledge gap about its use as a feed ingredient, indicating that clear labelling may be necessary to fully unlock its market potential. Overall, these findings suggest strong potential for increased carcass yield, consumer acceptance and market adoption of organic chickens raised on microalgae-supplemented feed.

ICROFS
Internationalt Center for Forskning i Økologisk Jordbrug og Fødevaresystemer
Fjerkræafgiftsfonden

REFERENCES

Abdel-Wareth, A. A. A., Williams, A. N., Salahuddin, M., Gadekar, S., Lohakare, J., 2024. Algae as an alternative source of protein in poultry diets for sustainable production and disease resistance: present status and future considerations. Front. Vet. Sci., 11, 2297-1769. https://doi.org/10.3389/fvets.2024.1382163

Altmann, B. A., Anders, S., Risius, A., & Mörlein, D. (2022). Information effects on consumer preferences for alternative animal feedstuffs. Food Policy, 106, 102192. https://doi.org/10.1016/j.foodpol.2021.102192

Altmann, B. A., Trinks, A., & Mörlein, D. (2023). Consumer preferences for the color of unprocessed animal foods. Journal of Food Science, 88(3), 909-925. DOI: 10.1111/1750-3841.16485

Bredie, W., & Lange, B. (2025). PROLOCAL – W3: Meat quality assessment. Section for Food Design and Consumer Behaviour Department of Food Science (FOOD). Personal communication 10th of April 2025.

Cullere, M., Schiavone, A., Dabbou, S., Gasco, L., & Dalle Zotte, A. (2019). Meat Quality and Sensory Traits of Finisher Broiler Chickens Fed with Black Soldier Fly (Hermetia Illucens L.) Larvae Fat as Alternative Fat Source. Animals, 9(4), 140. https://doi.org/10.3390/ani9040140

El-Moustaqim, K., Mabrouki, J., Benchrifa, M., Azdem, D., Hmouni, D. (2025). Microalgae-Based Food Additives for Improved Shelf Life and Nutritional Value. Biology and life sciences forum, 40, 42. https://doi.org/10.3390/blsf2024040042

Geronimo, B. C., Prudencio, S. H., & Soares, A. L. (2022). Biochemical and technological characteristics of wooden breast chicken fillets and their consumer acceptance. Journal of Food Science and Technology, 59(3), 1185–1192. https://doi.org/10.1007/s13197-021-05123-3

Janocha, A., Milczarek, A. & Głuchowska, J., 2022. Effciency of peas in broiler chicken feeding. Animal Science and Genetics, 11-23. DOI: 10.5604/01.3001.0015.7767

Lafarga, T., Rodríguez-Bermúdez, R., Morillas-España, A., Villaró, S., García-Vaquero, M., Morán, L., Sánchez-Zurano, A., González-López, C. V., & Acién-Fernández, F. G. (2021). Consumer knowledge and attitudes towards microalgae as food: The case of Spain. Algal Research, 54, 102174. https://doi.org/10.1016/j.algal.2020.102174

Olsen, M. F. L, Pedersen, J. S., Thomsen, S. T., Martens, H. J., Petersen, A., Jensen, P. E., 2021. Outdoor cultivation of a novel isolate of the microalgae Scenedesmus sp. And the evaluation of its potential as a novel protein crop. *Physiologia Plantarum*. 173(2), p. 483-494. https://doi.org/10.1111/ppl.13532

Roccatello, R., Tura, M., Aprea, E., Dabbou, S., Soglia, F., Sirri, F., & Gallina Toschi, T. (2024). Consumers' perception and liking of breast fillets from broiler chickens fed diets including dehydrated microalgae (Arthrospira spp.) and Black soldier fly (Hermetia illucens). Future Foods, 10, 100520. https://doi.org/10.1016/j.fufo.2024.100520

Schuldt, J. P. (2013). Does Green Mean Healthy? Nutrition Label Color Affects Perceptions of Healthfulness. Health Communication, 28(8), 814–821. https://doi.org/10.1080/10410236.2012.725270

Steenfeldt, S., & Pedersen, J. S. (2025). Freshwater algae as a new protein source for organic broilers, [Poster], espn, 23rd to 26th of June 2025. Maastricht, The Netherlands

Sunde, M. L. (1992). Introduction to the Symposium. Poultry Science, 71(4), 709–710. https://doi.org/10.3382/ps.0710709

Van Loo, E. J., Caputo, V., Nayga, R. M., Meullenet, J.-F., & Ricke, S. C. (2011). Consumers' willingness to pay for organic chicken breast: Evidence from choice experiment. Food Quality and Preference, 22(7), 603–613. https://doi.org/10.1016/j.foodqual.2011.02.003

Weimer, S. L., Zuelly, S., Davis, M., Karcher, D. M., & Erasmus, M. A. (2022). Differences in carcass composition and meat quality of conventional and slow-growing chickens raised at 2 stocking densities. Poultry Science. 101:101833. https://doi.org/10.1016/j.psj.2022.101833

Wu, J., Lin, Z., Chen, G., Luo, Q., Nie, Q., Zhang, X., & Luo, W. (2021). Characterization of Chicken Skin Yellowness and Exploration of Genes Involved in Skin Yellowness Deposition in Chicken. Front. Physiol. 12:585089. https://doi.org/10.3389/fphys.2021.585089