

Consumer Acceptance of Meat Quality From Organically Grown Broilers Raised on Microalgae- and Pea-Supplemented Diets

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Key Takeaways

Overall, consumers accepted organic chicken meat from broilers raised on microalgae-supplemented feed. Younger Danish consumers (18-49 years) had greater preference for yellow microalgae-fed chicken and more positive attitudes towards microalgae in chicken feed.

Background & Aim

Microalgae and pea supplements in feed pellets for broilers are a promising alternative for conventional organic feed. They replace soy protein while maintaining a high protein diet quality. Microalgae are also a source of carotenoids and previous research has shown the carotenoid content to increase, offering consumers a more yellow-orange coloured chicken meat (1).

This study evaluated consumer perceptions of organic broiler chickens raised on three types of organic feeds under controlled commercial conditions.

Methods

Experimental samples

Broilers were raised under realistic growth conditions on feeds with different protein-supplemented sources: **(A) Soybean and pea protein**, **(B) Microalgae (*Scenedesmus sp.*) and pea protein**, and **(C) pea protein**.

Consumers

Participants ($n=122$) were recruited in greater Copenhagen following the criteria:

- Residing in Denmark for at least five years.
- Consuming chicken at least once a month.
- Being active adults (18 and 79 years).

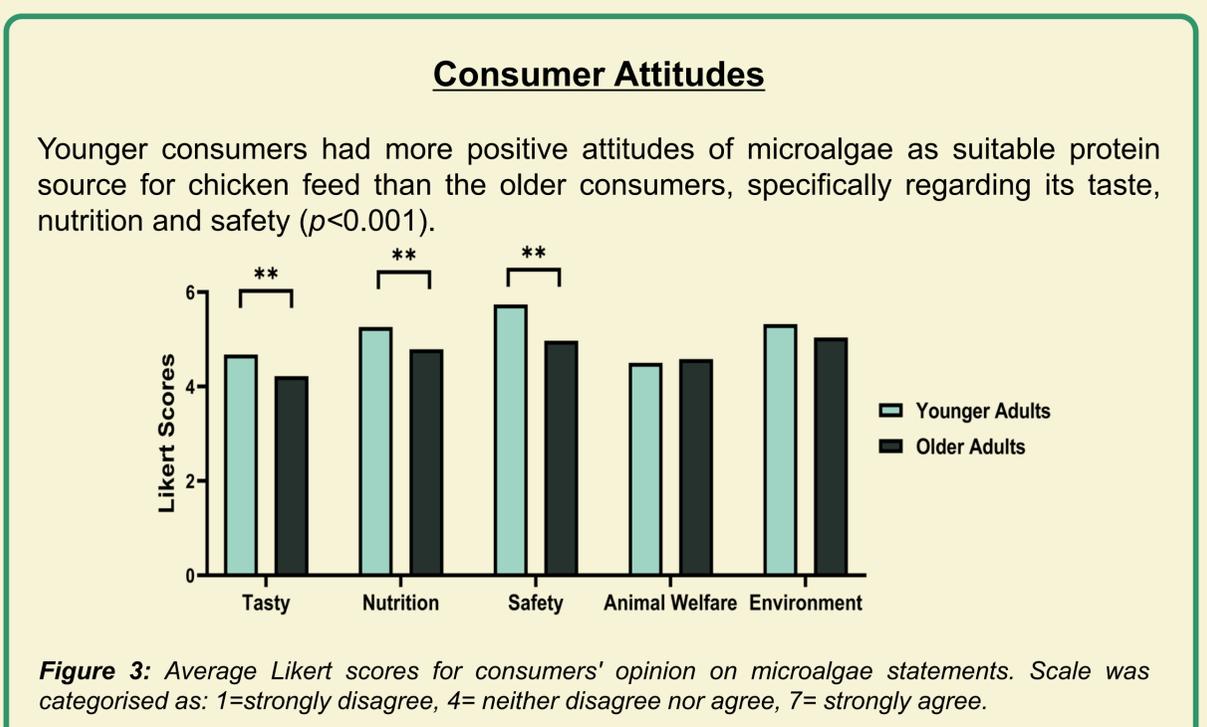
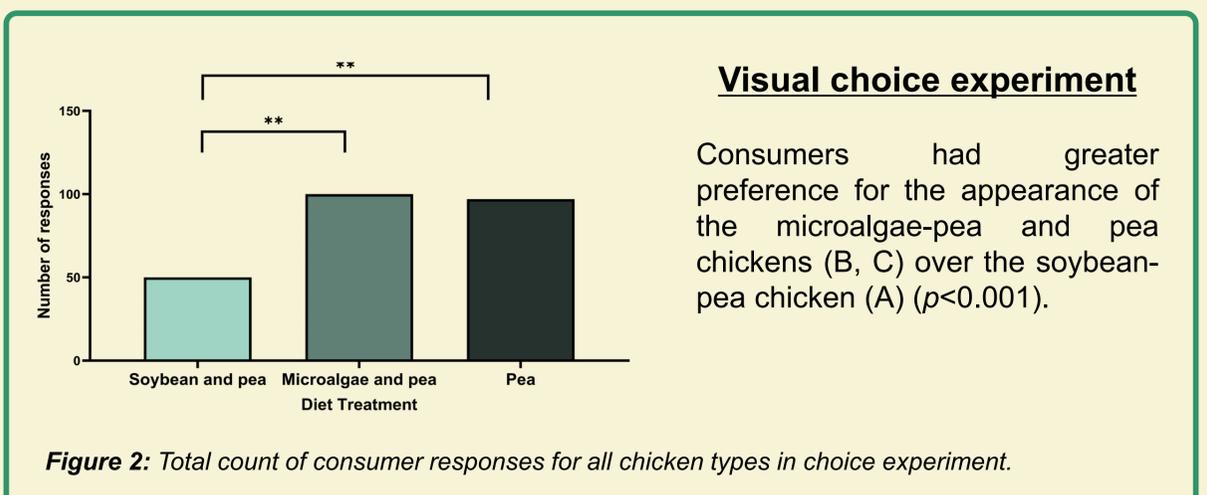
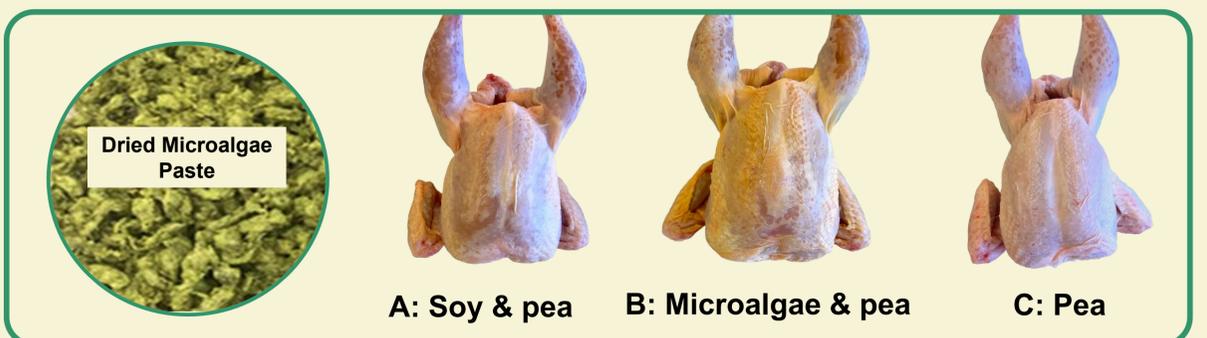
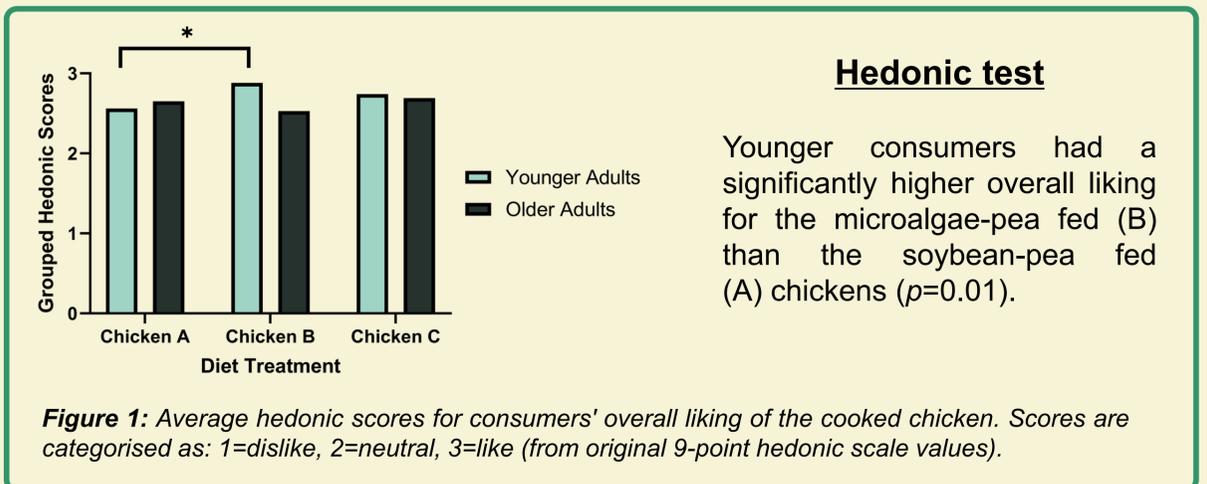
Consumer experiments

- (1) Hedonic test** to evaluate three types of oven-roasted chicken breast samples.
- (2) Consumer attitudes** and **willingness to pay** questionnaire.
- (3) Visual choice experiment** (post test day) simulating a shopping choice situation. Participants were presented with images of two raw whole experimental chickens, across three randomised sets, to assess their preference for appearance of the experimental chickens.
- (4) Questionnaire** on consumer background information.

Data analysis

The data were analysed according to “younger adults” (18-49 years, $n=50$) and “older adults” (50-79 years, $n=72$) segments.

Reference: (1) Lee A.X.H, Bononad-Olmo A, Jacobsen C., Lange B., Steinfeldt S., Bredie W.L.P (2025). Microalgae as a functional feed ingredient for organic broilers - Effect of dosage on biochemical and sensory quality. *Meat Science* (submitted).



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