

NOVEL FOOD ALGAE – HOW CONSUMERS PERCEIVE AND EVALUATE SELECTED ATTRIBUTES OF ALGAE-BASED FOODS

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Algae-based foods are becoming more and more popular in recent years. They not only provide health benefits for the human organism but are also cheap and sustainable to produce. Therefore, algae-based novel food products hold potential for future expansion within the consumer market.

Plant-based proteins are the main source of protein for food, but in general, meat consumption is raising on a global level. Microalgae-based proteins could be a reliable source to fulfil the population's need for protein and could be a “game changer” to the global trend towards more and more animal based nutrition. Microalgae-based proteins have some important advantages compared to established (plant-based and animal-based) protein sources such as lower land requirements, usage of non-arable land for cultivation, less freshwater usage, and the potential to be produced in seawater (Caporgno & Mathys, 2018).

There is already a market for products with health-promoting properties existing, triggered by new insights into the relationship between nutrition and health (Tuorila & Hartmann, 2020). However, the market introduction of new food products is also connected to significant barriers, for instance potentially arising for not being approved by regulatory authorities (Caporgno & Mathys, 2018). Another problem is probably food neophobia, which is seen as the general skepticism of consumers towards novel foods (Henriques et al., 2009). To overcome food neophobia, researchers have found that the most important factor in creating familiarity is direct exposure to a food; the theoretical knowledge about a product is only of secondary importance (Tuorila & Hartmann, 2020). Furthermore, Tuorila and Hartmann (2020) found out that men are a little more neophobic than women and older people are more prone to neophobic behavior than younger people. Indicators for the demand of the consumer for a certain product could be price premiums, where the consumer pays an excess price which is justified by the personal value for the product (Krystallis & Chrysosoidis, 2005). Value can be defined as the evaluation of an

experience with a product or service, based on all the benefits and disadvantages associated with it (Le Gall-Ely, 2009; Wertebroch & Skiera, 2002).

This is reflected in willingness to pay (WTP) for novel food. Confirming Mcfarlane and Pliner (1997), the relative willingness to try novel food increased linearly with age. This might be shown on the example of organic food with additional ethical characteristics such as animal welfare, biodiversity or fair prices for producers. Zander and Hamm (2010) conducted a study with participants from Austria, Switzerland and Germany. 6 % of consumers chose a low-priced organic product without additional value and an overall WTP of at least 20 % for added ethical properties of organic food. This example clearly shows that alternative, more sustainable food products might result in higher WTP and market share, if consumers understand and appreciate the food products. To find answers for algae food products, this study intended to answer the following research questions:

1. How important are selected product attributes for algae food products for consumers (including the utility of attribute levels)?

2. How far are consumers willing to pay a price premium for selected characteristics of an algae food product?

On the basis of a discrete choice experiment, we assessed consumer perception and willingness to pay (WTP) of Austrian consumers for innovative food products made from algae on the example of algae crackers. To approximate the weighting of the product attributes origin, price, flavor, production method, and packaging, Choice Based Conjoint Analysis (CBCA) was applied (online survey; $n = 301$). In addition, socio-demographic data were collected and the preferences of the participants towards algae food products were determined using scales from literature. Subsequently, WTP for each product attribute was approximated based on the outcome of the CBCA.

Results of the CBCA show that the attribute “production method” is the most important attribute with an overall importance of 26.7% (maximum part worth utility for the attribute level “organic”), followed by price (25.6%; as expected, the lowest price has the highest part worth utility), origin (20.6%; maximum part worth utility for domestic origin), packaging (17.3%; paper packaging) and taste (9.8%; almost no differences between “spicy”, “salt”, “sweet”). Based on these results, the overall WTP was assessed: +1.90 € for products produced in Austria compared to products imported from the EU; +2.42 € for organically produced and +1.44 € more for paper packaging (in comparison to plastic packaging). Altogether, the present study shows that in general algae-based food

products are positively perceived by consumers; the findings are roughly in line with previous studies from literature, with some interesting differences—e.g., higher WTP for organic algae-based food compared to similar studies where regional production was evaluated to be of higher importance. Therefore, it is expected that innovative algae foods have significant potentials in today's consumer food market; however, food producers should consider the expectations and perceptions of consumers in order to be able to successfully introduce novel algae food products in this—at least up to now—niche market.

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КОНЦЕПТУАЛЬНІ ЗАСАДИ ТА ІНСТРУМЕНТАРІЙ МАРКЕТИНГУ У ФОРМУВАННІ КУЛЬТУРИ ВІДПОВІДАЛЬНОГО СПОЖИВАННЯ

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Концепція маркетингу являє собою науково обґрунтований проєкт організації маркетингової діяльності, який ґрунтується на конкретній провідній ідеї, побудові ефективної стратегії, необхідному оперативному інструментарії здійснення маркетингової діяльності в цілях досягнення результатів, обумовлених стратегічним планом