SOCIETAL ACCEPTABILITY OF USING INSECTS AS ANIMAL FEED IN THE CONTEXT OF A SUSTAINABILITY-ORIENTED BIOECONOMY

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Abstract

The use of insect protein for livestock feed may provide a more sustainable alternative to fishmeal and imported protein-rich feed. Little is known about societal acceptability between and within different actor groups on a European level. To gain an understanding of reasons and arguments for acceptance or rejection of this innovation, a qualitative content analysis was carried out on feedback from stakeholders and citizens given during an EU public consultation. Value-based arguments were analysed in order to determine the degree of acceptability decisions and factors influencing acceptability. This will give insight into attitudes from different perspectives, where conflict lines may arise amongst actor groups and whether or not the innovation is considered acceptable for a development towards a sustainable bioeconomy.

Keywords

Insect-based feed, bioconversion, sustainability transformation, circular economy

1. Introduction

Production of animal source foods in Western Europe is dominated by industrial livestock farming, and feed is imported into the European Union (EU) to cover the "protein gap" (PROTEINSECT 2016). The source of protein-rich animal feed is not without its problems; soybean and maize imported from the Americas causes a decoupling between crop and livestock production, allowing specialization of large regions for either crops or livestock and increasing environmental impacts in both exporting and importing countries (LASSALETTA et al. 2014). And fish meal, used as aquaculture, poultry and swine feed, is associated with the depletion of wild fisheries stocks (NAYLOR et al. 2000). The use of insect protein for animal feed may provide a more sustainable alternative to fishmeal and imported protein-rich feed (DICKE 2018). In August 2021, the European Commission adopted a regulation which allows the feeding of insect proteins to pigs and poultry (EUROPEAN COMMISSION 2021), and it is expected that this legislation change will provide new opportunities for agri-food stakeholders (IPIFF 2021). There have been numerous studies investigating the biophysical and technical aspects of insect-based feed, which the European Food Safety Authority (EFSA) assessed as part of its risk profile (EFSA SCIENTIFIC COMMITTEE 2015). Social aspects regarding the use of insect-based feed have not been as extensively investigated, and little is known of the acceptability of different stakeholders group on a European level. Acceptability is a complex judgement process which can result in several possible outcomes such as acceptance or rejection (FOURNIS and FORTIN 2017). The aim of this study is gain knowledge on the acceptability of insects for livestock feed from the perspective of different stakeholder groups and citizens across Europe, as well as to gain an understanding of reasons and arguments for acceptance or rejection of this innovation.

2. Methods

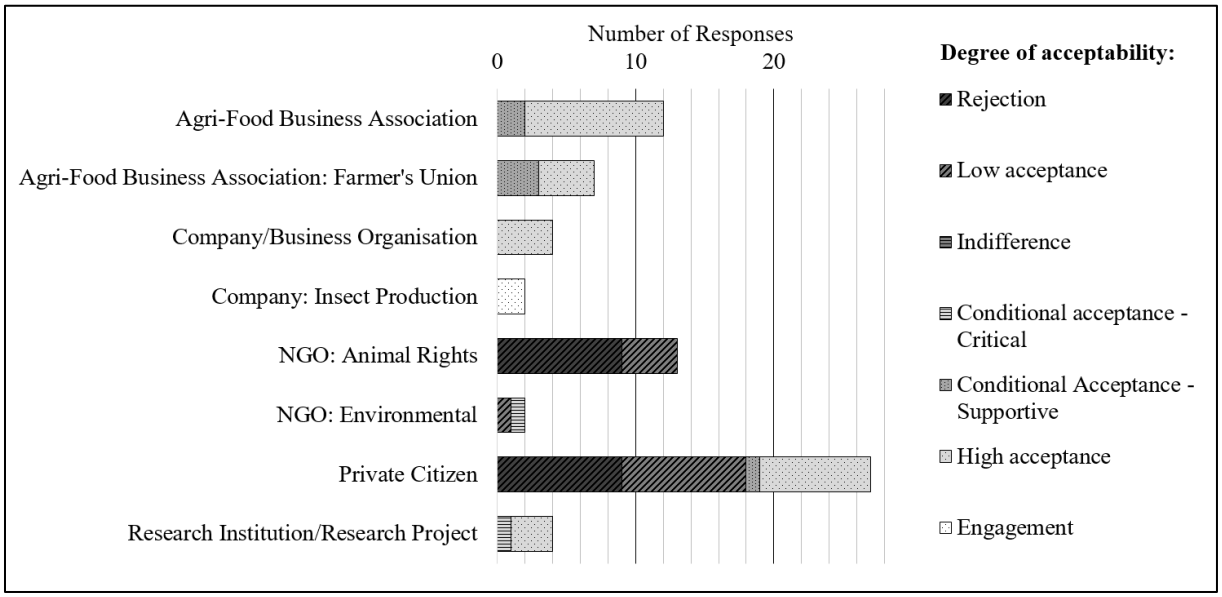
Before the adoption of the regulation allowing the use of insect protein as pig and poultry feed, a public consultation was conducted as part of the Commission's better regulation agenda. For the analysis, the responses from from stakeholders and citizens across Europe

were coded and evaluated by means of qualitative content analysis according to KUCKARTZ (2018). Special attention was paid to the value-based arguments in order to determine the degree of acceptability decisions and the factors influencing attitudes.

3. Results

A-priori categories such as technical, economic, legal, environmental and social aspects allowed for a preliminary grouping of data. The in-depth qualitative content analysis resulted in more detailed inductive (sub-) categories for determining factors influencing acceptability and develop hypotheses on the acceptability of this innovation amongst various actor groups. The degree of acceptability decisions were assigned a scale ranging from negative to neutral to positive attitudes (Figure 1), as suggested by BUSSE and SIEBERT (2018).

Figure 1: Acceptability of actor groups on the use of insects to feed pigs and poultry



4. Discussion

The following questions are expected to form the basis of the discussion:

- To what extent is the innovation seen as a viable solution to the challenges in intensive livestock farming?
- Does the innovation have a chance of being accepted by a critical number of actors to identify a market niche? What aspects need to be focused on in its development and establishment?
- Where are potential lines of conflict amongst actors?
- The consideration of insects as livestock feed and their potential to solve the "protein gap" represents a fairly straightforward and technical view. Do the actors see this as a straightforward solution?
- A transformation of the current agricultural and food system towards more sustainability is increasingly being discussed in society (DIEKMANN et al. 2020). Do the results show that such a transformation is demanded by the actors?
- Is the innovation considered exemplary for a development towards a circular bioeconomy?

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