

Introduction

Agricultural commodity groups are ideally positioned to bring together industry stakeholders and assist in establishing and implementing appropriate practices (Young & Hobbs, 2002). The Almond Board of California (ABC) exemplifies this role, being a leading commodity group in the world's largest almond-producing region – California, which produces about 80% of the world's almonds (Almond Board of California, 2023). To support safe food production among stakeholders, they have developed extensive food safety materials. However, limited knowledge exists on how stakeholders use these materials and how to enhance their user experiences. Involving end-users in the material design and evaluation helps to improve the perceived usability of educational materials (Kealey et al., 2023).

Objectives

This project aims to examine food safety materials developed by the agricultural commodity group for the almond industry, identify insufficiencies, and suggest ways to enhance the experience of stakeholders using these materials.

Materials and Methods

This project comprises two studies. In Study 1, we conducted a content analysis of food safety materials found on ABC's website to understand material characteristics, such as topics covered, material format, and target audience. We also gathered the download counts of each identified material over the past four years to quantify their usage. In Study 2, we conducted a series of semi-structured interviews with food safety managers from almond processors to gain insights into their material usage experiences and to gather suggestions for improvement.

Results

Material characteristics

A total of 49 food safety materials were identified from ABC's website, which accounts for 11,010 total downloads over four years (June 2020 – April 2024).

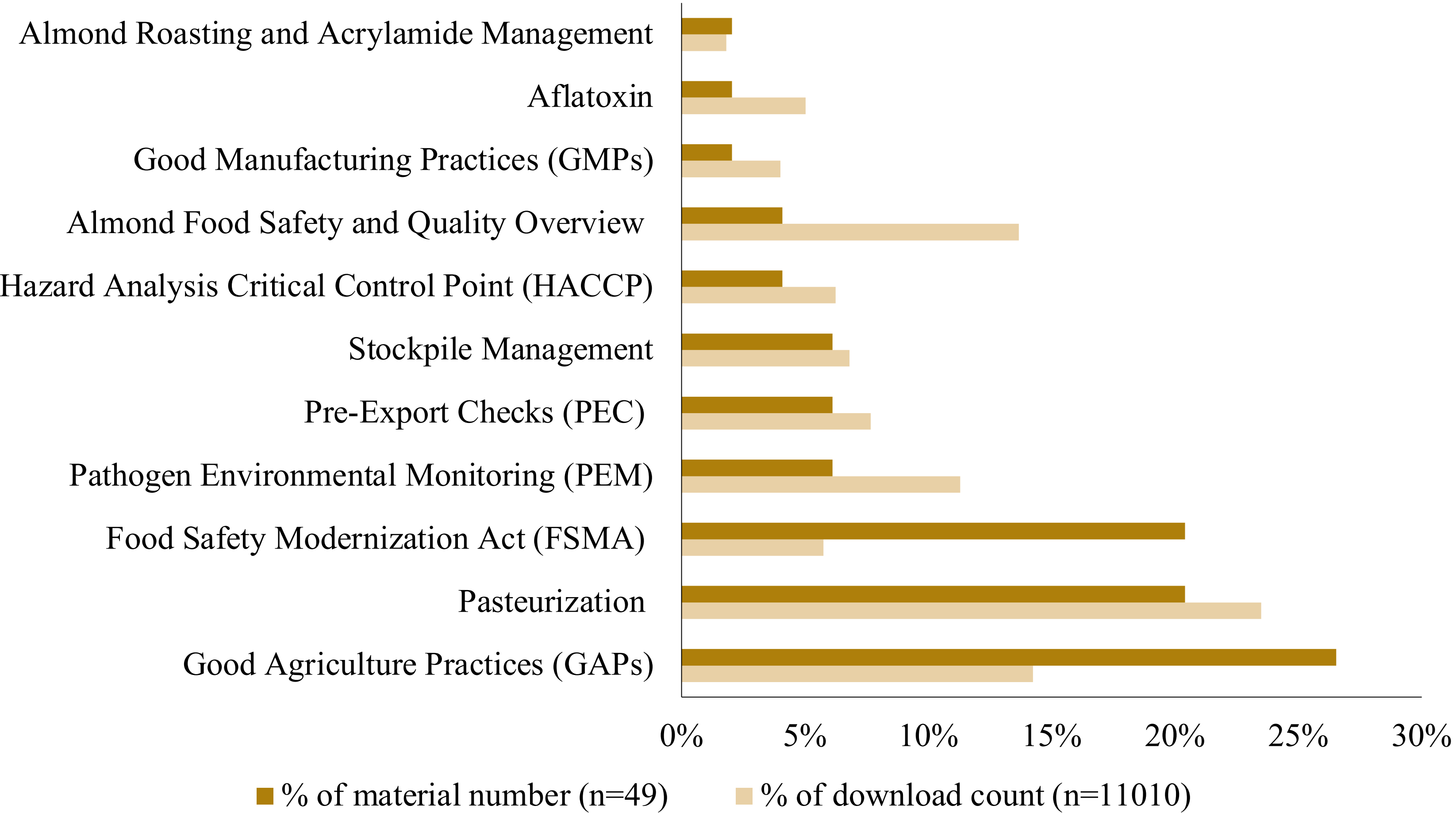


Figure 1. Material topic areas and their download counts

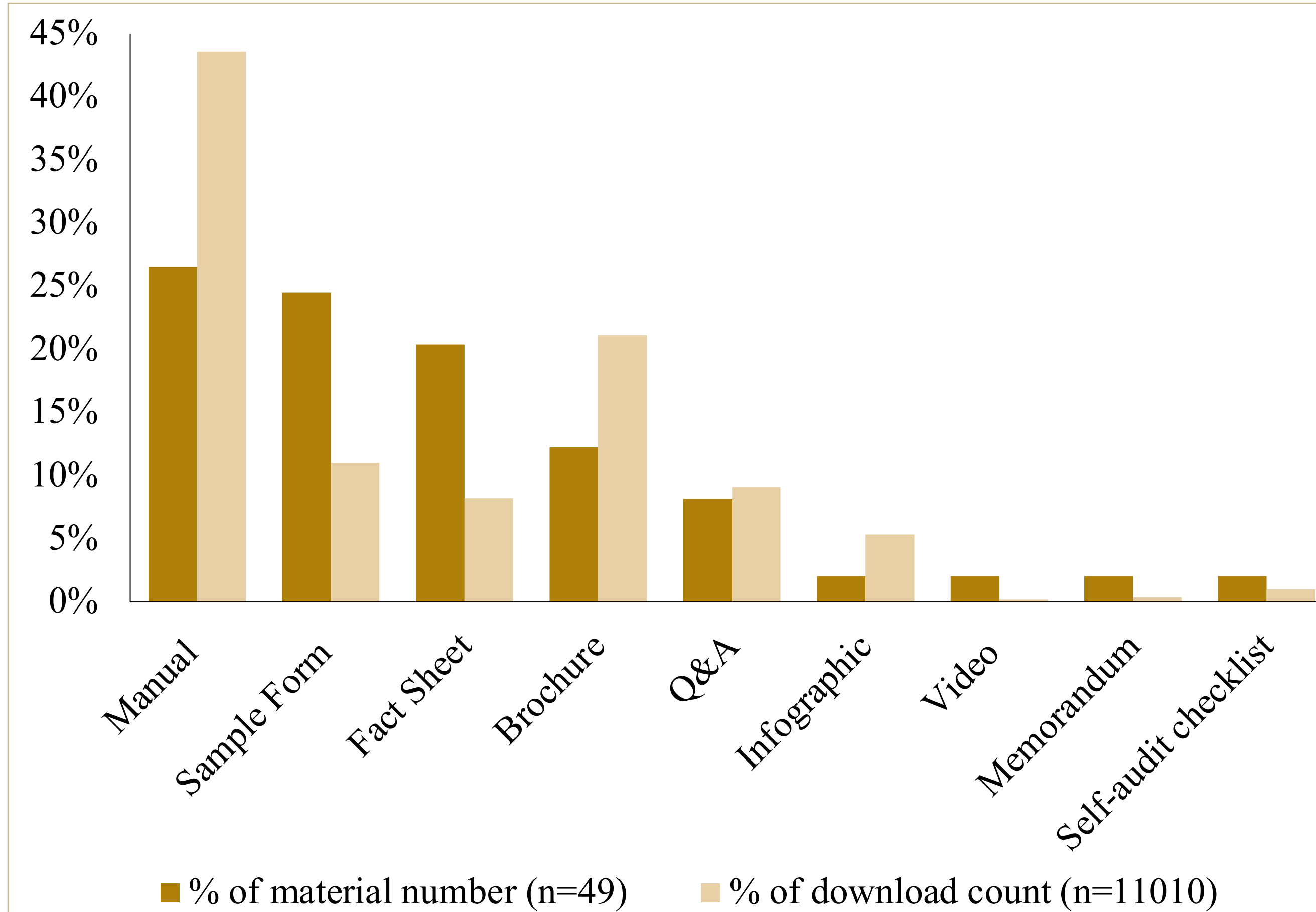


Figure 2. Material formats and their download counts

Interview participants demographics

A total of 15 food safety managers from almond processors participated in the interviews.

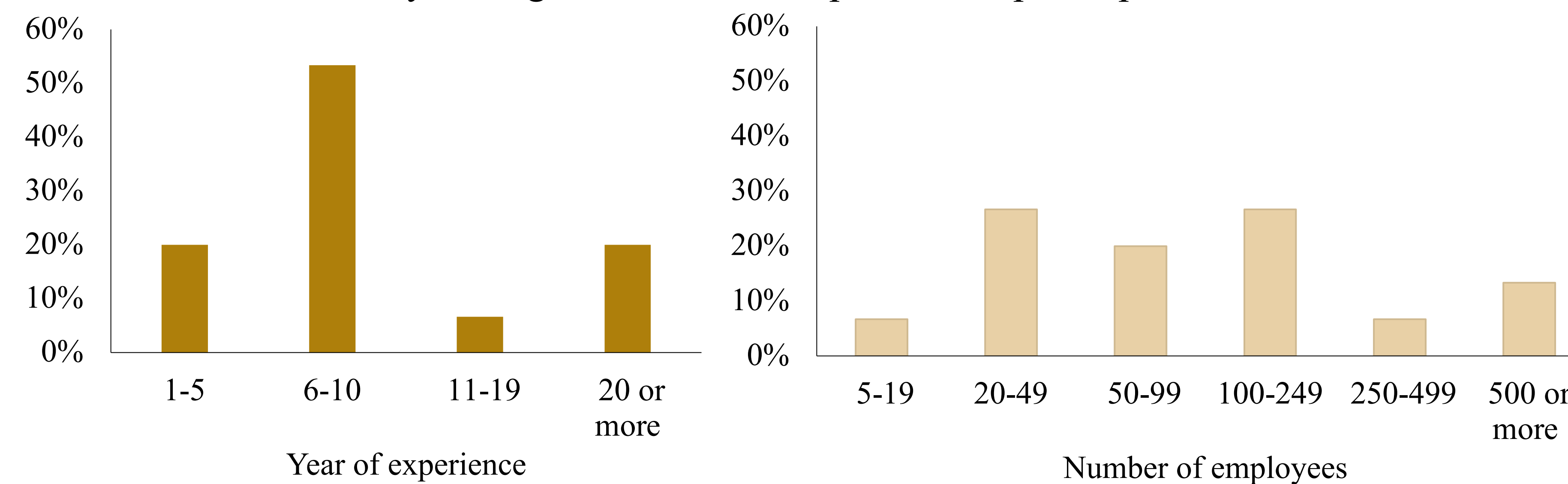
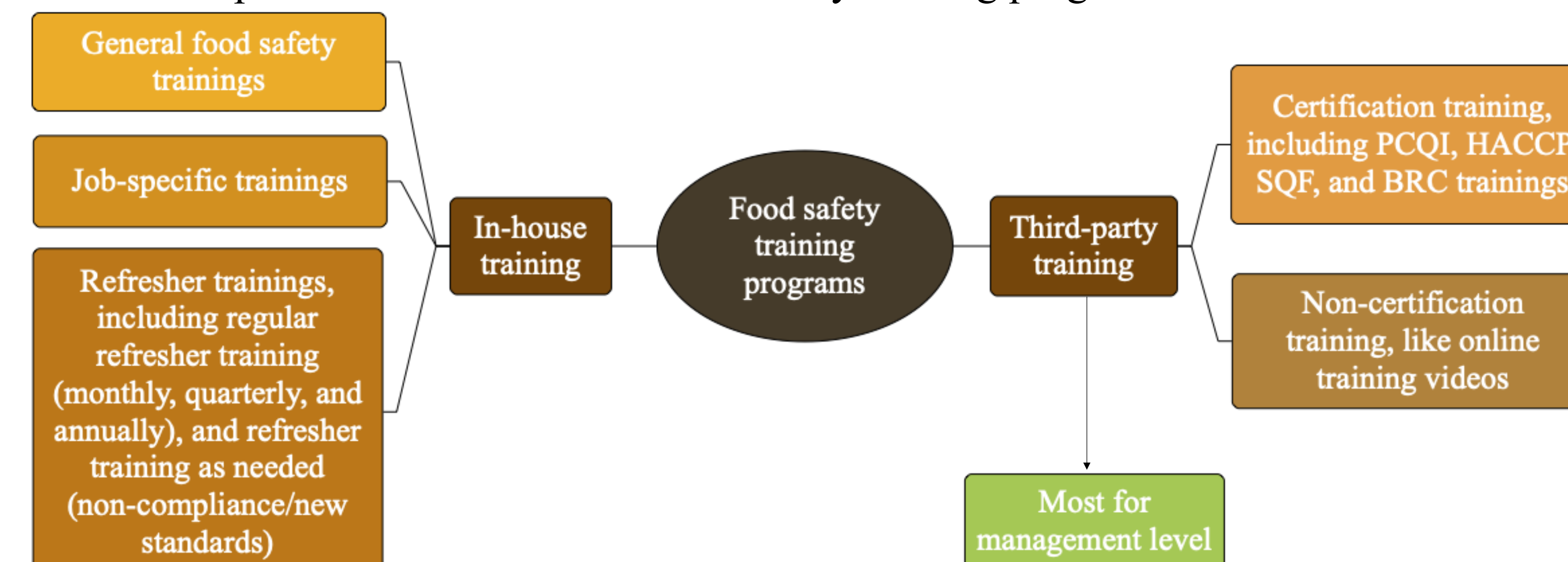


Figure 3. Participants' years of experience in the almond industry (n=15)

Figure 4. Number of employees in participants' company (n=15)

Current food safety programs implemented

All almond processors have various food safety training programs established.



Food safety material usage experiences

Most participants (87%) have used ABC's food safety materials. The majority utilized these materials as references when developing their training materials. Some used them to answer questions from growers and customers, and to prepare for audits and develop facility policies.

Challenges encountered when using the materials

Difficulty in locating needed information: "One of the biggest challenges for me is accessibility...When I use the search [function on the website], I get a lot of articles that are related to what I'm looking for. I know they have a ton of PDF, great graphics, and super clear information, but it's not super easy to find." (Manager with 9 years of experience)

Difficulty in digesting technical materials: "Sometimes, customers will have very specific questions. Our first go-to is the ABC to look for some information. But sometimes, and this is my honest opinion, it's too technical and I get lost along the way when I read the whole material." (Manager with 6 years of experience)

Opportunities

- Develop an AI-powered search engine or chatbot to assist users in finding accurate answers to their questions.
- Enhance material design with user-friendly formats, such as including a table of contents, highlights, and headings for easy navigation.
- Develop materials with varying technical levels for different target audiences.

Suggestions for future food safety material development

Participants appreciated the food safety materials developed by ABC, some provided suggestions for improvement for future material development.

Offering different language materials. Languages in need identified were Spanish and Punjabi

Including more pictures/visuals in the materials

Collaborating with external consultants who help with audits in material development

Offering materials in video or presentation-style formats that could be incorporated in the trainings

Significance

These findings deepen our understanding of stakeholders' needs and values, supporting the future development and improvement of food safety materials developed by the agricultural commodity group. User experiences (UX) should be considered when developing food safety materials.

Acknowledgments

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References

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