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Survey analysis of pet food industry decision makers' perception of plant-based ingredients

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Abstract details:

The global pet food industry has seen significant growth over the past decade, going from US\$59.3 billion in 2010 to US\$133.9 billion in 2023 (Statista, 2023). The United States holds the position of global leader in the pet market, accounting for just over 40% of the market share. This growth has attracted the attention of many in the agribusiness industry, commodity groups and policymakers. There has been an increasing trend in the industry towards utilizing premium grain sources, including whole grains and ancient grains, among which sorghum is included. This trend could present an opportunity for the heightened incorporation of sorghum. However, successful adoption or increased use of any ingredient in pet food will not be possible unless the manufacturers perceive the ingredient to have a potential for (a) improving production efficiency, and/or (b) resulting in more desirable product attributes as perceived by customers. The utilization of alternative ingredients like sorghum in pet food is pivotal for industry evolution, especially given its potential for enhancing production efficiency and product desirability. The advances in the use of sorghum in pet food have largely been driven by a few producers who are aware of the value and utility of sorghum. The literature review reveals that in general there is limited information about the needs and perceptions among pet food manufacturers regarding sorghum as an ingredient. In a report published by IFEEDER (2020), the top 13 plant-based ingredients for both dog and cat food were identified but sorghum was not included. Sorghum's appeal in the health and wellness market is notably enhanced by its gluten-free characteristic, making it a highly marketable attribute.

This study aims to investigate U.S. pet food manufacturers' current use, perception of sorghum's importance and potential in pet food, perception of sorghum's attractive features as an ingredient, perception of sorghum's limitations as a pet food ingredient, and interest in learning more about this ingredient. Objectives are twofold: To identify the attributes of sorghum that resonate with manufacturers, and to identify the characteristics of manufacturers who view sorghum favorably or unfavorably.

To gain improved understanding of pet food producers' perceptions about sorghum's potential as a resource-conserving ingredient in pet food a producer survey is designed, tested and implemented. U.S. pet food manufacturers were selected as the population of inference. A sample size of 100 pet food producers was determined for the survey to be appropriate for statistical inference. A detailed pet food



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producer survey questionnaire was designed to include 20 questions regarding (i) pet food producer demographics (e.g., business type, size, respondents job function, experience, extent of involvement in ingredient decisions, etc.), (ii) current plant-based ingredient use (e.g., plant-based ingredients currently utilized in pet food production, top five plant-based ingredients used, etc.) and (iii) perception of sorghum as a pet food/treat ingredient (e.g., perceptions of importance of sorghum as an ingredient in pet food/treats, future outlook on importance and consumer demand for sorghum as a pet food ingredient, advantages/attractive features of sorghum as an ingredient in pet food, top three advantages of sorghum, limiting factors of sorghum as ingredient, top three limiting factors as perceived by pet food producers, interest in learning more about opportunities for using sorghum as an ingredient in pet food, etc.).

To implement the survey, two primary pet food industry events were identified and partnered with: KibbleCon and Petfood Forum. The survey was implemented by a team of KSU graduate and undergraduate students from the Pet Food Program and the Agricultural Economics department. In addition to hard copy surveys, a survey questionnaire was programmed on Qualtrics, and a QR code was developed and distributed at Petfood Forum in order to maximize the number of responses. The total number of responses is 167, which is reflective of the population of inference consisting of U.S. pet food manufacturers.

The analysis involves estimations using binary Probit and Logit estimation methods aimed at examining the relationship between the respondent's perception of sorghum's importance as a pet food ingredient and business characteristics (e.g., size, type), respondent characteristics (e.g., role, experience in pet food), perception of sorghum's specific attractive features and perception of sorghum's specific limitations as an ingredient.

The preliminary analysis of the data from the survey of 167 respondents representing decision-makers in the U.S. pet food industry revealed several key insights about their perception of sorghum as an ingredient in pet food. First, despite its economic, technical and nutritional characteristics that are largely on par with alternative plant-based ingredients, sorghum is not in the top ten most commonly utilized plant-based ingredients in pet food. Second, less than half of the respondents in the sample consider sorghum as an important or extremely important ingredient in pet food and more than half believe that its importance will not increase in the future. Third, there is evidence that the limited interest by pet food manufacturers might have to do with the downstream market signals about the demand for sorghum in pet food, since the top two constraints/limiting factors of sorghum most commonly selected by respondents are low customer demand and negative customer perception. Fourth, the majority of pet food industry decision-makers in the sample expressed interest or extreme interest in learning about opportunities for sorghum as an ingredient in pet food/treats. This indicates that more effort should be directed towards unveiling, validating and communicating sorghum's attractive properties to pet food manufacturers.

Biography:



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Elaheh Rabiee is a passionate scholar with a strong math background and is currently a Ph.D. candidate in Agricultural Economics at Kansas State University (KSU). Elaheh's academic story started with a love for math, earning a Bachelor's in Pure Mathematics from Amirkabir University of Technology (AUT) in Tehran, Iran. Later, she switched to economics, achieving her Master's in Economics at KSU. Elaheh has a broad range of research interests, encompassing various fields. She has a passion for agribusiness with a particular focus on pet food. Additionally, she has a keen interest in machine learning and data mining.