

Meat or Plant? Understanding In-Context Consumer Preferences to Optimize Sustainable Meat-Plant Hybrid Burgers

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Abstract

The growing adoption of plant-based foods has intensified interest in reducing meat consumption due to its potential benefits for both human health and environmental sustainability [1,2]. Burger patties are among the most widely consumed meat products, yet few studies have evaluated hybrid meat-plant patties within the context of a complete burger eating experience [3]. This study investigated consumer perception of hybrid burgers formulated with ground beef and textured vegetable protein (TVP). Five patty formulations were evaluated: 100% beef, 80% beef, 60% beef, 40% beef, and 100% plant-based. Samples were presented under two labeling conditions, “burger” (n=69) and “plant-based burger” (n=66), and assessed using hedonic liking, just-about-right (JAR) scaling, check-all-that-apply (CATA), and ideal product perception methods. No significant differences in overall liking were observed between the 100% beef and 80% beef formulations across labeling conditions. However, the 80% and 60% beef blends were perceived as juicier and demonstrated more favorable texture and aroma characteristics than the 100% beef control. Products presented under the “plant-based burger” label received higher overall hedonic ratings, although labeling also influenced sensory perception, with consumers reporting more off-flavors when products were explicitly identified as plant-based. Across JAR and ideal profile evaluations, burgers perceived as too soft, too dry, or lacking flavor were strongly penalized. Overall, the findings demonstrate that incorporating TVP as a sustainable protein source in hybrid burgers can maintain consumer acceptance while improving selected sensory attributes. Furthermore, product labeling significantly shaped consumer expectations and sensory perception. These insights highlight the importance of both formulation and naming strategies in optimizing hybrid meat-plant burgers and supporting the development of more sustainable protein products.

References

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