

CHAPTER 6

RECOMMENDATION

The recommendation chapter serves as a cornerstone in the culmination of the study titled "Development, Optimization and Characterization of Protein-Energy Bars Using Response Surface Methodology." As a crucial component, it bridges the gap between theoretical research and practical application, offering actionable directives derived from a meticulous evaluation process. Through market surveys, optimization methodologies, developmental stages and characterization studies, a wealth of insights has been unearthed, laying the groundwork for a comprehensive set of recommendations. By distilling key findings from the study, this chapter provides invaluable guidance for stakeholders in the food industry, academia and beyond, aiming to propel advancements in the formulation, production and consumption of these nutritional product.

These recommendations are outlined below:

For Sports Institutes:

- Implement the inclusion of Protein Energy Bars in canteens and bars that cater to athletes and coaches. It may offer a quick and efficient way to fulfil macronutrient needs and promote healthy nutrition for physical activity.
- Engage in collaborative intervention studies to examine the effects of Protein Energy Bars on sports performance. Specifically, focusing on physically active populations such as bodybuilders and gym professionals to evaluate the efficacy of the study bar as a nutritional supplement.
- Promote informed food choices among athletes and sports personnel by incorporating Protein Energy Bars into dietary plans. This may help reduce sports-related injuries and enhance overall performance and well-being.
- Promote the placement of Protein Energy Bars in vending machines strategically located at airports, railway stations, university/college canteens and corporate canteens, providing convenient and nutritious snack options for busy travellers, students and professionals seeking quick and healthy energy boosts on-the-go.

For Physically Active Consumers:

- Utilize the formulated extruded crispies as ready-to-eat breakfast cereals or as food add-ons in recipes to enhance protein content and crunchiness, catering to the needs of consumers seeking nutritious and convenient meal options.
- Consider the nutritional content and benefits of Protein Energy Bars as part of a balanced diet into daily dietary routines as a convenient and nutritious snack or meal option, particularly for individuals engaged in regular exercise or sports activities, to support optimal performance and recovery.
- Maintain an understanding of the accessibility of Protein Energy Bars in retail establishments, sports institutes and fitness centres. Considering them as a convenient and effective option for meeting post-workout nutrition needs and supporting overall health and fitness goals.
- Maintain an understanding of the accessibility of Protein Energy Bars in retail establishments, sports institutes and fitness centres. Consider their practicality and efficacy as a means of fulfilling post-workout nutritional requirements while also promoting holistic well-being and physical achievement objectives.
- Considering the recommendations from esteemed organizations like the International Society of Sports Nutrition, the International Olympic Committee and Nutrition and Hydration Guidelines for Excellence in Sports Performance, which advocate for daily protein intake ranging from 1.2 to 2.0 g per kg of body weight, the Protein Energy bars, supplying 35 g of protein per serving, present a convenient and effective means for individuals, particularly athletes and those engaged in physical activity, to fulfil their heightened protein requirements. This becomes especially relevant in situations where regular food options are inaccessible or inconvenient.

For Industries:

- Support the prospect of obtaining patents for the developed Protein Energy Bars, as well as transferring the technology to companies for commercial production and assisting in the development of innovative products with market potential.
- Implement the systematic experimentation and optimization process outlined in the study to refine existing products or develop new ones, ensuring optimal sensory qualities and nutritional content to meet consumer demand effectively.

Recommendations

- Utilize high consumer acceptance and preference scores of the study bar to inform marketing strategies, emphasizing the nutritional value, safety and sensory appeal of products to attract and retain customers in a competitive market.

For Researchers:

- Conduct long-term studies on the efficacy of added functional foods into the Protein Energy Bars in supporting sports performance and overall health, investigating their potential benefits physically active individuals.
- Undertake intervention studies to evaluate the specific impact of Protein Energy Bars on sports performance, focusing on diverse groups such as competitive athletes, bodybuilders and gym enthusiasts to assess their effectiveness in meeting nutritional needs and enhancing performance.
- Collaborate with industries to transfer technology related to the development and production of Protein Energy Bars, facilitating the commercialization of research findings and promoting innovation in the food industry.