a) Advisor: Renata Ernlund Freitas de Macedo
Graduate Program: Animal Science
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b) Project of the professor approved in the Call for PIBIC scholarships or by public research funding institutions

PRODUCTION AND EVALUATION OF THE FUNCTIONAL ACTIVITY OF LOW FAT AND SODIUM PROBIOTIC FERMENTED SAUSAGES

c) Abstract

One of the major challenges today in the meat industry is to develop products that are sensorially satisfying to consumers, do not cause harm to human health and can still provide them with some physiological benefit. This condition is mainly related to the reports that associate the consumption of meat products with the occurrence of chronic nontransferable diseases such as obesity, diabetes and hypertension. Therefore, the reformulation of these products may be by reducing or replacing ingredients such as sodium and animal fat and/ or by adding functional ingredients such as probiotics. Among meat products, fermented products such as sausage are best suited for the addition of probiotics. To make feasible the addition of probiotics in these products without causing changes in the technological characteristics of product identity and quality, the use of probiotic strains isolated from the naturally occurring microbiota in these foods is advantageous. Among the traditional ways of delivering probiotics in these foods, protecting them from the adverse conditions of the medium stands out the encapsulation. However, most encapsulation techniques require special equipment and have a high production cost. Recently, the immobilization of probiotics in food matrices has emerged as a lower cost alternative to promote the physical confinement of these microbial cells, protecting them and keeping them viable in the food. For fermented meat products such as fermented sausage the use of small-diameter and light-colored cereals could be an option for

the immobilization of probiotics. In this context, it is intended to develop a new functional meat product, analogous to salami, by applying strategies to make the product healthier, such as reducing sodium and animal fat. Although the inclusion of probiotics in meat products is not an entirely new concept, the proposed product is novel in composition and contains probiotics immobilized in a food-borne matrix, which may incorporate fibers, proteins and other nutrients into that food and possibly allow storage without refrigeration. This increases the variety of probiotic foods to consumers, and changes the concept of unhealthy food associated with meat products, due to information that suggests harmful health consequences from the consumption of these foods.

d) Area of knowledge: Food Science and Technology

e) Project duration for International students - semester (x) per year (x)
Dedication of 20 hours/ week

f) Relationship with the following undergraduate courses: Food Engineering, Biotechnology, Veterinary Medicine, Nutrition

g) Prerequisites (if any)
- knowledge of English, minimum intermediate level,
- adapt to teamwork
- minimum knowledge of basic statistics, organization of data in spreadsheets in Excel and interpretation of data
- interest in working in a laboratory
- Be organized

h) Advising language
- English, Spanish, French