



I-INTERNATIONAL MEETING OF ANIMAL SCIENCE IN SEMI-ARID REGIONS

Universidade Federal do Agreste de Pernambuco – UFAPE
July 03rd to 05th, 2024, Garanhuns-PE

Animal products industry and food science

Preparation of fish waste-based snacks for dog food at different temperatures and cooking times

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Over the years, fish has become a food frequently consumed by the population due to its high nutritional value, with proteins, lipids, a high content of fatty acids, omega-3, minerals, carbs and water (GONÇALVES, 2011). The Brazilian Northeast was once considered the largest producer of Tilapia in the country, with Castanhão in Ceará being one of the largest production centers for the species in the Northeast (IBGE, 2023). Every day, a large amount of fish waste is disposed of inappropriately at open-air markets in Arapiraca-AL. This improper disposal becomes a social and environmental problem. With a view to changing this scenario, the aim was to classify this material, checking its use in the production of dog treats. The material was collected in September 2023. During the fair, plastic buckets were left at the stalls to collect the material. The gills were separated for processing and production of the treats. Once separated, the material was taken to the autoclave at 115°C for 15 minutes. After sterilizing the material, we proceeded with the processing, which consisted of adding the cooked material to the food processor and homogenizing it completely. Equal portions (250g) of the final material were separated into containers and stored in the Technologies and Products of Animal Origin (TPOA) laboratory. All the feed contained the same proportion of gills, but the sources of thickeners varied (cornstarch, corn meal and wheat). Natural and vegetable dyes were used to color the snacks (Turmeric, Ora-pro-nobis, Beetroot and Coloral). A snack cutter was used to give the material a uniform shape and they were placed in an electric oven. Tests were carried out on the cooking time of the snacks: 15, 18 and 20 minutes in the oven at 180°C to reach the desired temperature. It was observed that cooking the treats in a conventional oven (stove) for 15 and 18 minutes at 180°C kept them moist, making it difficult to preserve them, as the cookies do not contain preservatives. However, snacks cooked for 18 minutes at 200°C in a stove reached a moisture content of less than 10%, promoting a longer shelf life for the final product. It can therefore be concluded that gills discarded at street markets have potential for producing dog food.

Keywords: Food, Pet, Sustainability, Zootechnics.

Financial support: CNPq,