SLACAN 2025
ISSN: 3086-2221

EFFECT OF DIFFERENT PACKAGING ON THE PHYSICO-CHEMICAL AND MICROBIOLOGICAL QUALITY OF FROZEN BEEF BURGERS

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Vol.2, 2025 - 330606
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Resumo

Beef burgers are prone to deterioration caused by microbiological and physico-chemical changes, diminishing their shelf life. Active packagings made from agroindustrial residues, beyond extending shelf life and avoiding food loss, also contribute to a more sustainable economy. This study aims to evaluate the microbiological and physico-chemical stability of frozen beef burgers, packaged with edible films, made from a combination of onion and garlic at refrigerated temperature. Beef burgers were processed combining two bovine cuts: beef knuckle (*Vastus intermedius, Vastus lateralis, Vastus medialis and Rectus femoris muscles*) and brisket (*Pectoralis profundus*), in a 61.5% and 38.5% proportion, respectively. The meats were ground in a grinder with an 8 mm and 5 mm disc for the flank and brisket, respectively, and then reground in a 12 mm disc for homogenisation of the samples. The onion and garlic film was produced using the continuous casting technique from a 4:1 ratio of onion and garlic pulp. The beef burgers were divided into three treatments: 1. control (no film), 2. onion (Allium cepa L.) and garlic (Allium sativum L.) edible film and 3. paper. The samples were frozen at -40°C until reach -18°C in the center of the sample and were stored at -25°C until analysis. The beef burgers were evaluated every 30 days for 4 months, by the following physico-chemical analyses: pH, cooking loss, shrinking loss and at 1, 60 and 120 days by microbiological analysis (psychrotrophic microorganisms). PH values ranged from 5.77 to 5.99, which diminished over time but did not affect the microbiological quality, with values of ~10^4 (below Brazilian regulation values) found in all treatments and times. Cooking loss values increased for all treatments over time, with the onion/garlic edible film treatment showing lower values at 30, 60 and 90 days, but at 120 days, cooking loss values were not different for all treatments ($p<0.05$). Shrinkling loss values increased over time, but no difference between treatments was found, showing values from 14.68% to 20,69%. Using onion/garlic edible film was suitable for maintaining beef burgers' microbiological quality and physicochemical properties.

Programação

10:10 até 11:10 em 17/11/2025
Salão Real
(https://eventos.galoa.com.br/slacan-2025/calendar/activity/21141)

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Eixo Temático

- Caracterização Química e Físico-química de Alimentos (FQ)

Palavras-chave

Beef burguer

Shelf life

Edible films