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H-29
EXTRACTION OF 2-ALKYCYCLOBUTANONES IN IRRADIATED MANGO AND PAPAYA USING ACETONITRILE. VALIDATION OF METHOD

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The 2-akylcyclobutanone marker is used for the identification of irradiated foods that it contain fatty. The official analytic method for the detection of irradiated foods it has been adopted by the European Economic Community (EN 1785:2003). The objective of this paper is to validate the method for the detection of 2-dodecylcyclobutanone (2-DCB) and 2-tetradecylcyclobutanone (2-TCB) in irradiated fat-containing fruits using a quicker extraction method with acetonitrile and comparing it with the official shoxhlet standard. The results of this study showed the efficiency of the extraction method with acetonitrile for the detection of irradiated mango and papaya.

Keywords: *Food irradiation, radiolytic markers, 2-alkylcyclobutanone, acetonitrile.*

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H-30
INFLUENCE OF THE DIETARY CAMELINA OIL ON THE CHOLESTEROL CONCENTRATION OF THE LONGISSUMUS DORSI AND SEMITENDINOSUS MUSCLE IN FATTENING PIGS

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The purpose of the study was to determine the Large White pigs treated with camelina oil have lower cholesterol concentrations two type of muscle. The experiment was conducted for a period of 63 days on 3 groups of Large White pigs (18 pigs/group) with an average initial weight of 40 kg/animal. In the end of the experiment, the 18 pigs were slaughtered and samples of Longissimus dorsi and Semitendinosus muscles were collected. The animals had free access to the feed and water. The control group (C) received a barley, wheat, peas, full fat soya and sunflower oil (3%) diet. The diets for the experimental groups (E1 and E2) had the same basal structure, but the sunflower oil was replaced by camelina oil (3%). Group E2 was also treated with a dietary antioxidant mixture (2%). The three diets had the same protein and energy levels (15.55% CP and 3192 kcal ME/kg. The fatty acids profile of the dietary oils and of the meat cholesterol was determined by gas chromato graphy using a Perkin-Elmer Gas-Chromatograph with flame ion detector (FID), using hydrogen as carrier gas. We used a capillary column BPX70 (DB-23 Length 60 m; Diam 0.250 mm; Film 0.25 um Agilent) for fatty acids and ELITE-5 (30 m, 0.32 mm ID, 0.1 um. df film) for cholesterol. The analytical methods were in agreement with SR CEN ISO/TS 17764-1 and 2: 2008 for the fatty acids, and with ISO 12228:1999 for cholesterol. Prior to the analysis, the fatty acids were transformed in methyl esters. For cholesterol determination, the fresh meat samples were saponified, extracted in petrol ether, concentrated and transferred on chloroform; the components were thereafter separated in the column and were identified by comparison with standard chromatograms. The fatty acids determinations from the sunflower oil have shown that the ratio of the polyunsaturated fatty acids ω-6 / ω-3 was 161.55, while the same determinations performed on the camelina oil produced a ratio of the polyunsatur ated fatty acids ω-6/ω-3 of just 0.63. The cholesterol concentrations from the Semitendinosus samples were 34.52±4.76 mg % in group E1 and 36.03±6.64 mg % in group E2, significantly (P≤0.05) lower than 46.99±8.71 mg % in the fresh sample from group C. The concentrations from the Longissimus dorsi samples were 30.17±4.98 mg % in group E1, 33.50±5.72 mg % in group E2, and 34.61±6.62 mg% in the fresh sample from group C. The higher concentration of ω-3 fatty acids from the camelina oil decreased the cholesterol level from the muscles samples collected from the experimental groups; the differences were significant (P≤0.05) compared to the control group for Semitendinosus muscle.

Keywords: *Cholesterol, fatty acids, gas-chromatography, pig, camelina oil*

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