



XVIIth World Congress of the International Commission of Agricultural and Biosystems Engineering (CIGR)

Hosted by the Canadian Society for Bioengineering (CSBE/SCGAB)
Québec City, Canada June 13-17, 2010



INFLUENCE OF CONJUGATED LINOLEIC ACID (CLA) SUPPLEMENTATION ON PROBIOTIC BACTERIA VIABILITY AND SENSORY PROPERTIES OF STIRRED YOGURT

MARBY ROCIO BARÓN¹, RUBÉN DARÍO GODOY-SILVA¹,
LUIS-FELIPE GUTIÉRREZ^{2,3}

¹ Facultad de Ingeniería, Departamento de Ingeniería Química, Universidad Nacional de Colombia, Carrera 30 45-03, Ciudad Universitaria, Bogotá D.C., Colombia, mrbaronn@unal.edu.co, rdgodoys@unal.edu.co

² Instituto de Ciencia y Tecnología de Alimentos (ICTA), Universidad Nacional de Colombia, Carrera 30 45-03, Edificio 500A, Ciudad Universitaria, Bogotá D.C., Colombia, lfgutierrez@unal.edu.co

³ Faculté des Sciences de l'Agriculture et de l'Alimentation, Université Laval, Québec, G1V 0A6, Canada, l-felipe.gutierrez.1@ulaval.ca

CSBE101120 – Presented at Section VI: Postharvest Technology, Food and Process Engineering Conference

ABSTRACT Conjugated linoleic acid (CLA) has attracted much attention because of its numerous health promoting effects, such as anticarcinogenesis, anti obesity, anti diabetes, and cholesterol lowering. Dairy products contain relatively large amounts of CLA (2-37 mg/g fat), but this quantity is not enough to satisfy the minimal requirements for promoting beneficial health effects. Consequently, there are many efforts to increase the CLA concentration of dairy products, but no significant results have been achieved to date. In order to enhance the CLA concentrations and to provide dairy products richer in CLA, we evaluated the sensory and stability properties of stirred yogurt supplemented with CLA (mainly *cis*-9,*trans*-11,octadecadienoic acid and *trans*-10,*cis*-12, octadecadienoid acid), as well as the influence of this supplementation on the number of viable probiotic bacteria (*L. acidophilus*, *L. rhamnosus* and *B. lactis*). The CLA concentration of yogurts was evaluated and quantified by gas chromatography. Sensory evaluation was carried out with trained panelists in order to estimate possible changes in the sensory properties of yogurts by the addition of CLA. The results showed that it is possible to enhance the concentration of CLA in yogurts without affecting the viability of probiotic bacteria or the sensory properties.

Keywords: conjugated linoleic acid, CLA, probiotic bacteria, fermented milk, yogurt.