J Fundam Renewable Energy Appl 2017, 7:7 (Suppl)
DOI: 10.4172/2090-4541-C1-039

Ozonation of the Emu oil for the therapeutic purposes and its anti-inflammatory evaluation *in vivo*

Daniel Martin Marquez Lopez
Instituto Politécnico Nacional, Mexico

The emu oil is a valuable feedstock for the pharmaceutical and the cosmetic industries. Its importance defined from the functionality based to chemical and structural characteristics, which depend on the composition and ratio of the fatty acids present in this oil. All these characteristics are related with the health effects and the therapeutic utility. The results of various experiments define it as a natural recipe for the muscular pains, rheumatism and wound skins, reducing the inflammation; for the burns healing and skin diseases. It has the antibacterial and anti-inflammatory properties, hypoallergenic and moisturizing ability. Recently, it was classified by the Department of Health of Australia as a cosmetic and pharmaceutical product. In this work, the ozonation of the emu, sunflower oils and the acids mixture (oleic, linoleic and linolenic) was studied. The emu oil and their ozonized derivatives were characterized by FTIR, NMR (1H, 13C, 31P). By these techniques, the presence of phospholipids and ozonides, as the ozonation final product, was observed. Simultaneously, the values of the Total Unsaturation (TU) and the ozonation degree of these oils throughout the reaction with ozone were determined. Complementarily, the variations in ozone consumption, the eliminated TU and the formation of sub-products were correlated from simple modeling methods. To study the anti-inflammatory effect, as well as to know the possible application as a potential therapeutic agent in Alzheimer's disease, the ozonated oil is evaluated *in vivo* in mice, varying the ozonation degree in comparison with the vegetable oils. We observed that the ozonated emu oil increases the therapeutic properties and can be used as the anti-inflammatory agent.

dmarquezl1200@alumno.ipn.mx