

Abstract: 3.º Simpósio em Produção e Transformação de Alimentos

## **Análise ao teor de biodiesel em amostras de gasóleo rodoviário**

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### **Abstract**

Biodiesel is a renewable fuel produced from natural oils and fats, adequate for incorporation into fossil diesel without requiring alterations of the manufactured Diesel engines. Its use not only contributes to reduce fossil fuel dependence, but also presents advantages for human health and the environment by reducing pollution with petroleum products and greenhouse gases emissions, and improving air quality by reducing CO, particle matter and hydrocarbons in exhaust pipe emissions. Thus, biodiesel is considered to be potentially less harmful to human health than fossil diesel. In Portugal, biodiesel incorporation into automobile diesel fuel is mandatory by law since 2010: Decree-Law nr. 117/2010 of October 25th imposes a minimum biodiesel content of 6.75% by volume.

The aim of this project was to verify the degree of compliance with the law in Portugal by applying a technique of FTIR spectroscopy. **Methods:** In this work, a laboratory methodology was designed for the assessment of biodiesel incorporation levels in marketed automobile diesel fuel samples by FTIR spectroscopy. Two lots of 14 road transportation diesel fuel samples were collected from seven suppliers in Lisbon and Leiria districts at two different time periods. **Results and Conclusions:** The results from the analysis showed that all were compliant with the legal limit of 6.75% biodiesel content by volume, imposed by the Decree-Law nr. 117/2010. The applied FTIR spectroscopic technique showed good reproducibility, sensitivity and response linearity.

