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APPLICATION OF INFRARED SPECTROSCOPY IN FOOD CONTROL QUALITY

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The acquisition of information about qualitative and quantitative properties of raw material, intermediate and end products have become more important, mainly due to their economical effects. Therefore, the medium infrared spectroscopy (MIR) and near infrared spectroscopy (NIR) have demonstrated their potential applications in the industry, including process monitoring, quality determination and dairy adulteration, for products such as milk powder, butter and cheese (FAGAN *et al.*, 2009). Based on the recent technological breakthrough in softwares and hardwares designs, there has been a development of more compact, portable and robust equipments, with sophisticated systems to support a fast spectral data processing and analysis, evaluating in a few seconds several components without chemical residues generation. The spectroscopy infrared application have been popularized, and nowadays can be found for both in food or agricultural fields. (LIN *et al.*, 2009).

According to Dufour (2009), the main food compounds are usually complex molecules, exhibiting specific chemical groups, as carboxylic and amines functions. As each chemical group can absorb in a infrared spectral region, after identifying the specific absorbed regions of each group, it is possible to characterize and even quantify the compounds.

Moreover, the spectroscopy MIR and NIR have been established as a fast, accurate, non-invasive, non-destructive and environmentally friendly technique food quality control (LIN *et al.*, 2009). The MIR spectroscopy, for instance, it is a certificated method for milk analyses to verify the milk quality in the dairy sector by ISO 9622: 1999, AOAC (Association of Official Analytical Chemists) e IDF (International Dairy Federation) (CASADIO *et al.*, 2010).

Finally, nowadays it is notable an increasing application of spectroscopic methodologies, additionally to statistic tools in food quality control, especially for dairy products as an alternative to conventional techniques.

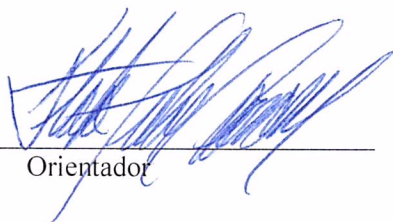
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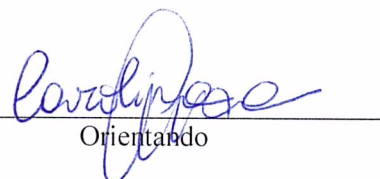
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Orientador



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