عنوان مقاله:

Quantification of Virgin Sesame Oil by Using Dielectric spectroscopy

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خلاصه مقاله:

Sesame oil is widely adulterated with other cheap edible oils such as sunflower, canola and corn oils. Therefore, developing a low-cost, practical and rapid analytical method for detecting such adulteration in sesame oil would be useful and needed. In this research, authentication of sesame oil from adulterated with vegetable oils (sunflower, canola and corn) was proposed. 192 signals in the range of 10 kHz and 50 MHz were feed into the sensor that filled with oil sample and then voltage values of samples were extracted and recorded and analyzed. In this regard, adulterated oils were predicted by ANN, linear regression and SVM. The obtained results indicated that ANN with topology of 2-8-1 has the best performance with accuracy of 0.98 that related to Sesame- Canola oil samples and most weak performance pertain to Sesame-Sunflower oil samples with R2=0.89. Results showed the developed technique has a good capability of detecting impurities in sesame oil.

کلمات کلیدی:
Sesame oil, Adulteration, Dielectric, Authentication

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