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New Robust sensitive florescence spectroscopy coupled with PLSR for estimation of Quercetin in *Ziziphus mucronata* and *Ziziphus sativa*

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Abstract

Flavonoids are natural antioxidants derived from plants and commonly found in a variety of foods to sequester free radicals. Quercetin, belonging to flavonol subclass of flavonoids, has received considerable attention because of its wide uses as a nutritional supplement as well as a phytochemical remedy for a number of diseases. In the current study, quantification of quercetin was carried out in two medicinally important flavonoid rich plants *Ziziphus mucronata* and *Ziziphus sativa*. Emission spectroscopy was utilized as a new method coupled with Partial Least Squares Regression (PLSR) and the cross validation was done by UV-visible spectroscopy. The results indicated the higher quercetin content in *Z. mucronata* (1.50±0.034 %) than *Z. sativa* (1.21±0.052 %), and were further verified through Folin-Ciocalteu Colorimetric method (*Z. mucronata*; 1.41±0.26 % and *Z. sativa*; 1.13±0.136 %). In this study the sensitivity was explained in term of slope i.e. Slope = 0.9973.

Keywords: *Ziziphus mucronata*; *Ziziphus sativa*; Quercetin, Florescence spectroscopy, UV-VIS spectroscopy, PLS regression

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