Taxonomic discrimination of *Solanum nigrum* and *S. giganteum* by Fourier transform infrared spectroscopy Data

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ABSTRACT:

Fourier transform infrared spectroscopy (FTIR) provides biochemical profiles containing overlapping signals from a majority of the compounds that are present when whole cells are analyzed. Leaf samples of higher plant species and varieties were subjected to FTIR to determine whether plants can be discriminated phylogenetically on the basis of biochemical profiles. The results showed that the infrared spectra of *Solanum were* fingerprint-like patterns which were highly typical for different taxa. The principal component analysis of Fourier Transform Infrared (FTIR) data confirmed most of morphological classifications of the species proposed in previous works. The protein absorption bands located between 1800-1500 and the bands between 1500-1000 cm^{-1} (finger print region) showed variation between the two species *S. nigrum* and *S. giganteum*. Infrared spectra of leaves are of taxonomic value in genus *Solanum,* and this technique can be widely used for identification and classification of other taxa when standard spectra are available.