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FTIR SPECTROSCOPY – A NONDESTRUCTIVE METHOD TO MONITOR THE IMPACT OF DIFFERENT FERTILIZERS ON THE FLORISTIC MATRIX OF PERMANENT GRASSLAND

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Abstract

Quantification of the floristic matrix is important both for animal's nutrition and for the biodiversity monitoring of plants species under the influences of substance flow. Our researches have the main aim to study the possibilities offered by Infrared Spectroscopy in rapid, unpolluted and non-destructive analysis of floristic matrix modification from perennial grassland fertilized with organic and/or mineral fertilizers.
It was performed three different FTIR models: for *Poaceae* (R^2=0.949; RMSEC = 29.23; SD = 18.68), for *Fabaceae* (R^2 = 0.961; RMSEC= 20.63; SD = 17.13) and for the other botanical families (R^2 = 0.860; RMSEC = 3.34; SD=7.68). The resulted statistical parameters for these three FTIR models and the differences for control samples between references and predicted values show that it is promising to use FTIR spectrometry to monitor the impact of different fertilizers on the floristic matrix of perennial grassland.

Key words: Fabaceae, forage, Infrared Spectroscopy, multivariate analysis, *Poaceae*

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