EARLY DIAGNOSIS AND MANAGEMENT OF NITROGEN DEFICIENCY IN PLANTS UTILIZING RAMAN SPECTROSCOPY

ABSTRACT

The present invention relates to the use of a Raman spectral signature of nitrate, as a biomarker for an early, real-time diagnosis of nitrogen status in growing plants in a non-invasive or non-destructive way in order to detect nitrogen deficiency before the onset of any visible symptoms. The early, real-time diagnosis of nitrogen deficiency in plants makes it possible to correct nitrogen deficiency for the avoidance of negative effects on the yield and biomass of growing plants or leafy vegetables.

FIG. 7