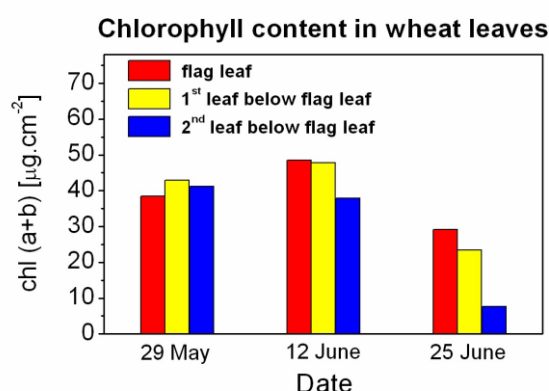


Fast non-destructive determination of chlorophyll content in plant leaves

Department of Biophysics

• Service description

The chlorophyll content in leaves (i.e. leaf greenness) is an important parameter of the physiological status of plants. The greenness of leaves changes during the plant growth and development, depends on the leaf position and is affected by nutrition (namely by nitrogen), canopy density, water availability and also by stress factors. Analytical methods that are widely used for the determination of chlorophyll content are destructive, time-consuming and expensive. What we offer is the determination of chlorophyll content based on the measurement of transmittance and reflectance of leaves in spectral regions typical for chlorophyll absorption. The measurement is performed using small portable instruments, is non-destructive and takes only a few seconds. In a short time it is possible to get a huge amount of data, which can be used for statistical analysis of chlorophyll content in particular plant leaves, for the determination of plant chlorophyll profile or canopy greenness map etc. In addition, it is possible to perform the calibration of the instruments for a particular plant species, which then allows the presentation of chlorophyll content in mg m^{-2} .



• Basic equipment related to the service

Our laboratory is equipped with two portable chlorophyll meters - SPAD 502 (Konica Minolta Sensing, Japan), based on the measurement of transmittance, and PlantPen NDVI 300 (P.S.I., Brno, Czech Republic), based on the measurement of reflectance. The possibility to combine both instruments allows us to measure thin as well as thick leaves, to monitor leaf polarity (difference in greenness of upper and lower leaf surface), etc. The measurement can be performed anywhere – in growth chambers, greenhouses or in the field.

• Price and other terms

The particular price depends on the arrangement of the service, on the need for the calibration or data correction. For preliminary consultation, please contact the scientist listed below.

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