


Leaf Chlorophyll content

Aim : Measurement of the Chlorophyll content in leaves as a method to estimate the nitrogen content

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Surveys nb/year	3x per year;
When?	after tillage before bloom, at bloom and at veraison 
Time estimate	approximately 15min per treatment, about 45-1h per vineyard
General context/references	Soil disturbance can influence the availability of plant nutrients and water, which can affect plant vigor. SPAD Meter uses light reflectance of 2 wavelength and this value is correlated with the leaf chlorophyll content

Material:

SPAD Meter Chlorophyll Measurements (Konica Minolta: <https://www.konicaminolta.eu/en/measuring-instruments/products/colour-measurement/chlorophyll-meter/spad-502plus/introduction.htm>). Additionally labeling of plants and leaves to measure same plants and leaves at different timepoints.

Sampling method:

Selection of 10 vines per treatment in 2 different vine rows. Selection of 2 leaves per vine.

Protocol:

1. Selection of vines and leaves

Randomly selection of 10 vines per treatment (30 per vineyard) and 2 leaves per vine. An equal number of sun and shadow exposed leaves should be used. Leaves should be without damage and healthy.

2. Measurements

- Calibrate instrument
- Cleaning of the leaf at the measurement point
- Measurement of 3 replicates per leaf and different places
- Note al values

Data collected:

Data have to be collected in a data sheet that reminds the name of the experimental site, the date, the treatment in which the survey is done. The data sheet is provided in the Dropbox in an excel file "chlorophyll content fieldsheet".xls.

Site :		Treatment :			Date:	BBCH:		Conductor:		Site :		
AT3-II		Lunzerried			bare ground					AT3-II		
Sketch of the vineyard:						Sketch of t						
A-25		A-26										
1	2	3	4	5	VINE Rows						1	
VINE Row	N° vine (label)	N° shoot	N° leave	SPAD-Meter	PolyPen	Vine Row	N° vine	N° shoot	N°leave	SPAD-Meter	Polypen	VINE Row
2	1					3	2					2
2	1					3	2					2
2	1					3	2					2
2	1					3	2					2
2	1					3	2					2
2	1					3	2					2

At the end of the annual survey, please add your data in the second sheet called “Chlorophyll data” following the example below:

country	vineyard	treatment	cover_type	location	year	measure_period	date	N° vine	N° leave	SPAD_value_1	SPAD_value_2	SPAD_value_3
						1		1	1			
						2		1	2			
						3		2	1			
								3	...			
								...				
								10				
						1 = after tillage before bloom	yyyy-mm-dd					3 values per leaf
						2 = bloom		1 to 10 vine plants				
						3 = veraison		2 leaves per plant	1 / 2 leaf nb			