

Figure S1. Example for the visualization of polyphenolic mass balance data in soil. TPC in soil was related to the total content in the GP (100%). A vertical line displays the mean TPC in the rainwater extract for the respective GP variety with 1:5 extraction ratio (n=4). Numbers in the right side of the plot indicate the recovery in the soil based on the rainwater experiment. TPC in all soil depths were added up and displayed as “Total amount”.

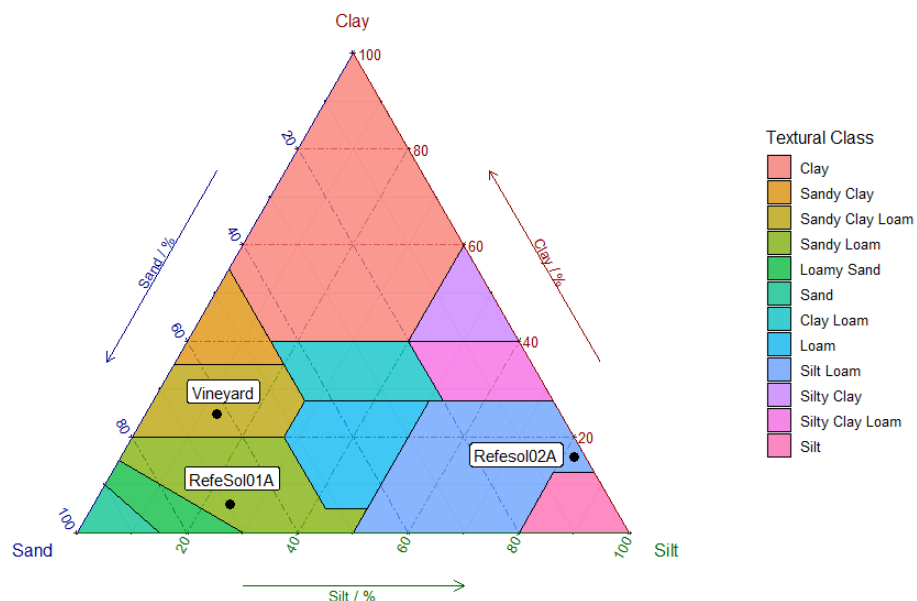


Figure S2. Overview of the particle size distributions of the used soils according to USDA soil taxonomy. The textural class of the sampled vineyard soil was estimated with the hydrometer method. The R-Package ‘ggtern’ [1] was used.

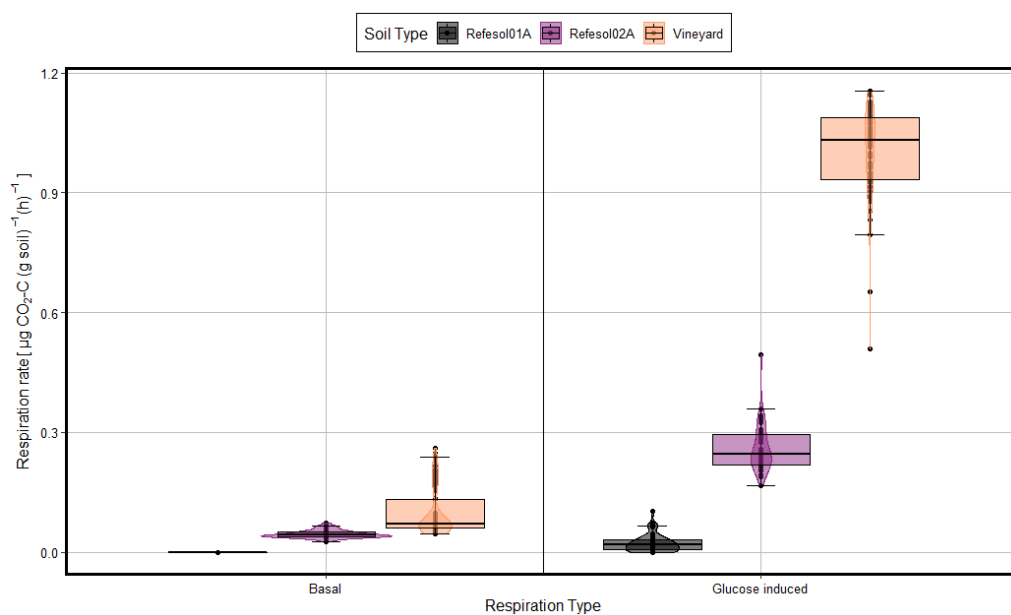


Figure S3. Activity of used soils based on the microbial CO₂ respiration rate. All air-dried soils were preincubated at 40% of their respective WHC for 7 days. Glucose solution was applied according to the MicroResp™ manual at 30mg (g of soil water)⁻¹. The Basal Respiration treatment group received an equal amount of pure water. The main incubation took place for 6h at 20°C.

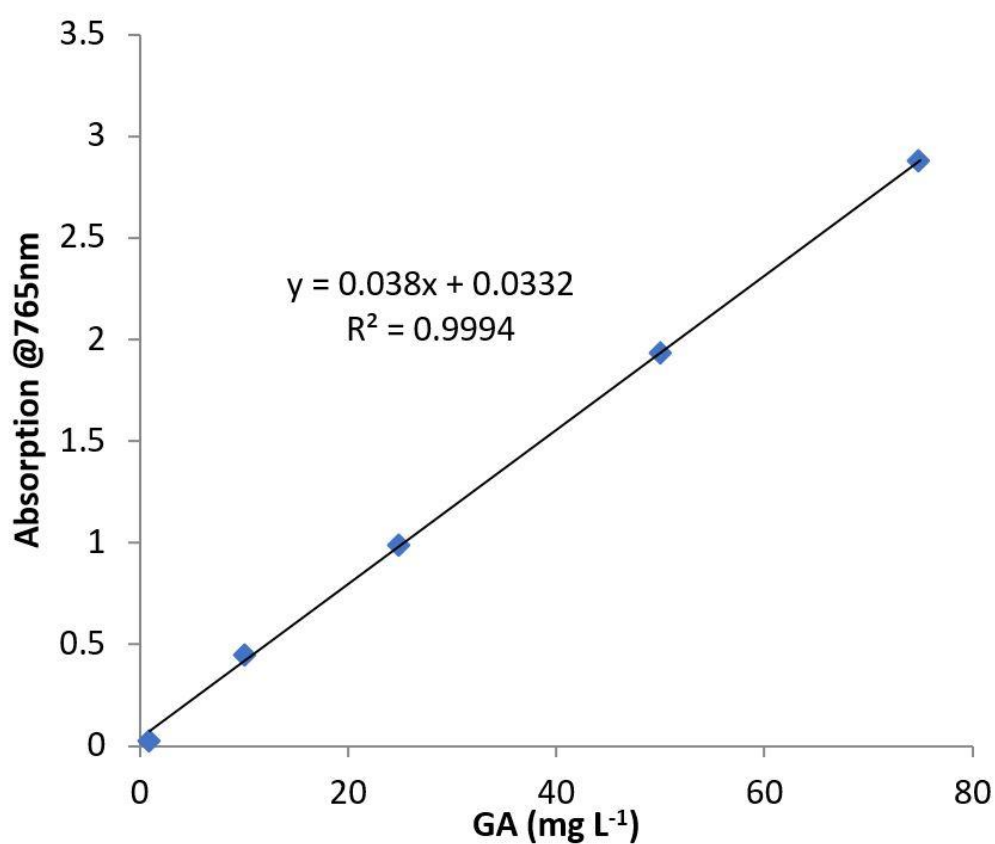


Figure S4. Linear model for the calibration of the Folin-Ciocalteu method for the analysis of TPC in soils, based on gallic acid, ranging from 1-75 mg L⁻¹.

Table S1. Statistical differences in TPC recovery in soil and leachate based on GP variety, soil type and soil depths. Simple main effects were calculated by a 3-way-Anova Multiple comparisons of means were analyzed with a Tukey post-hoc test with a 95 % confidence interval.

GP variety	Simple main effect: df=3, f=5.2424 p=0.004	
	Multiple pairwise p_{adj.}	Sign. code
Riesling - Dornfelder	0.006	***
Pinot noir - Dornfelder	0.993	ns
Pinot blanc - Dornfelder	0.844	ns
Pinot noir - Riesling	0.012	**
Pinot blanc - Riesling	0.047	**
Pinot blanc – Pinot noir	0.945	ns
Soil type	Simple main effect: df=2, f=2.7413, p=0.077	
	Multiple pairwise p_{adj.}	Sign. code
R01A - R02A	0.711	ns
R01A - Vineyard	0.067	ns
R02A - Vineyard	0.296	ns
Soil depth	Simple main effect: df=3, f=3.3191, p=0.030	
	Multiple pairwise p_{adj.}	Sign. code
0-10 – 10-20	0.051	ns
0-10 – 20-30	0.064	ns
10-20 – 20-30	0.999	ns
0-10 – Leachate	0.081	ns
10-20 – Leachate	0.999	ns
20-30 - Leachate	0.997	ns

Significant differences are indicated as ns: $p > 0.05$, **: $p \leq 0.01$, ***: $p \leq 0.001$.

References

1. Hamilton, N.E.; Ferry, M. ggtern: Ternary diagrams using ggplot2. *J. Stat. Softw.* **2018**, *87*, 1–17.