Supporting information for: Interception of copper-based fungicides by cover crops: a way to prevent soil contamination in vineyards?

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Comment C1: Details on the calculation of the fraction of copper sprayed with copper fungicides that was intercepted by cover crops in Experiment 1

Comment C2: Details on the statistical analysis of the data for Experiment 1

Figure F1: Climate data for Experiment 1

Table T1: Treatment schedule of copper fungicides sprayed on cover crops in Experiment 1.

Comment C1: Details on the calculation of the fraction of copper sprayed with copper fungicides that was intercepted by cover crops in Experiment 1.

Assuming the difference in the concentration of Cu on/in the shoots between the start (t_0) and the end (t_f) of the experiment only resulted from leaf interception, we calculated the fraction (F) of copper intercepted by a given cover crop for a given copper fungicide using the following equation:

$$F = \frac{(Shoot\ Cu_{t_f} - \overline{Shoot\ Cu_{t_0}}) \times d_{biom} \times CR}{\sum Q_{sprayed\ Cu}} \times 100 \qquad (1)$$

Where:

$Shoot\ Cu_{t_f}$ is the concentration of Cu on/in the shoots of the cover crop measured at the end of the experiment (in µg/g of dry matter)

$\overline{Shoot\ Cu_{t_0}}$ is the mean concentration of Cu in the shoots of the cover crop before the first application of copper fungicide (in µg/g of dry matter)

d_{biom} is the mean biomass density measured using a quadrat (0.3m x 0.3m) on a portion of the microplot where the biomass density was the highest (in g of dry matter/m^2)

CR is the mean coverage rate of the cover crop in the microplot on the day of the last application of copper fungicide (in %)

$\sum Q_{sprayed\ Cu}$ is the cumulative amount of Cu sprayed on cover crops during the experiment (in g)

Comment C2. Details on the statistical analysis of the data for Experiment 1.

Data from Experiment 1 were processed using SYSTAT 13 Edition 2009 software (SPSS Inc., 233 S. Wacker Drive, Chicago, USA). When necessary, the data were log-transformed to obtain normal distribution and homoscedasticity of the residuals. An analysis of variance (ANOVA) and Tukey's HSD test (at a 5% significance level) were performed to identify the parameters significantly affected by the application of copper fungicides in a given cover crop, as well as the parameters that differed significantly among cover crops in a given fungicide treatment.

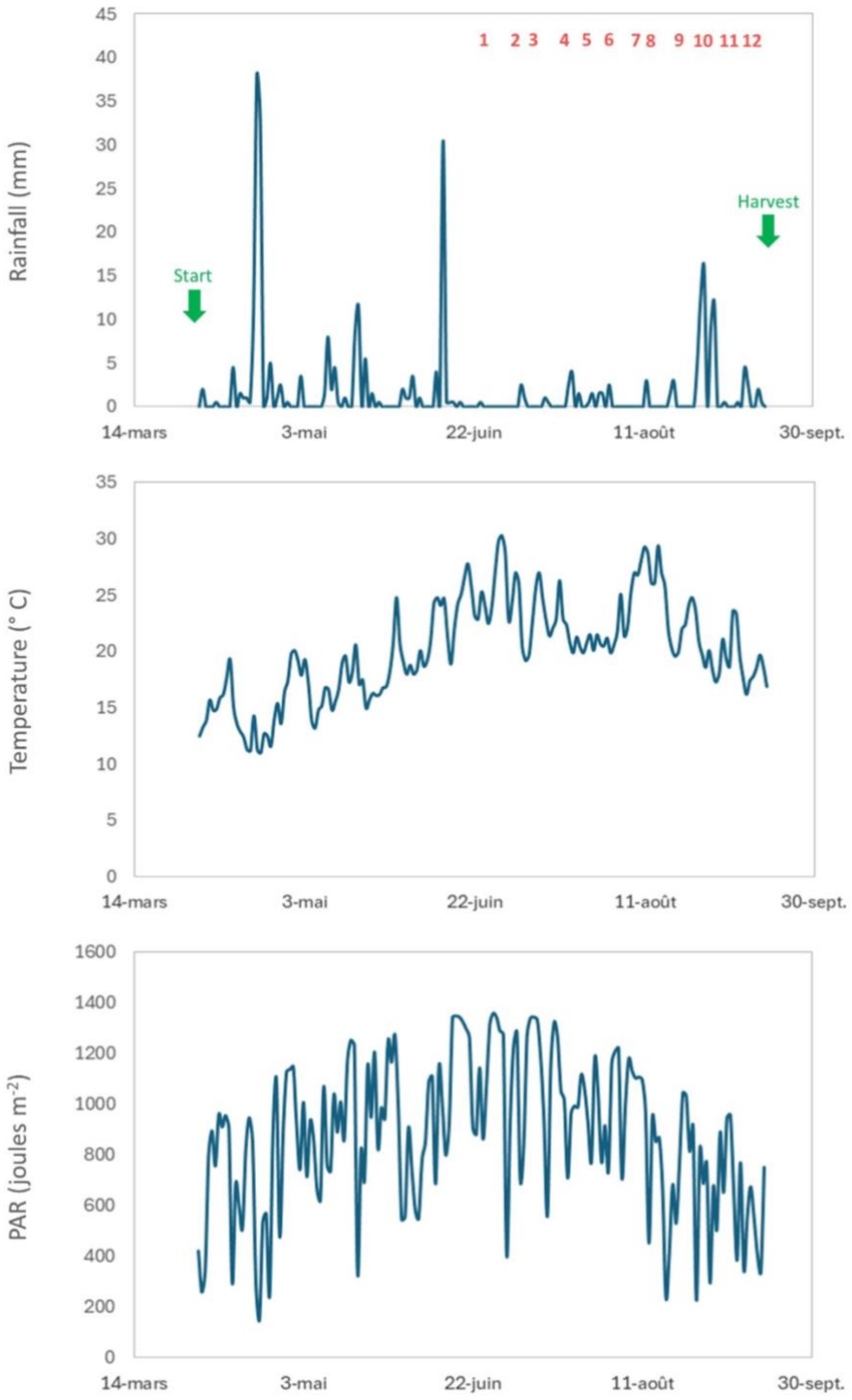

Figure F1. Daily rainfall, mean air temperature, and photosynthetic active radiation (PAR) recorded close to the experimental site during Experiment 1. The numbers in red are the dates copper fungicides were sprayed.

Table T1. Treatment schedule of copper fungicides (Kocide Flow®, BB-RST Disperss®) sprayed on cover crops in Experiment 1.

No.	Date	Product	Dose†	
			g product ha^{-1}	g Cu ha^{-1}
1	06/26/2025	Kocide Flow®/ BB-RSR Disperss®	667 / 1000	200
2	07/04/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200
3	07/10/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200
4	07/18/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200
5	07/25/2025	Kocide flow® / BB-RSR disperss®	667 / 1000	200
6	08/01/2025	Kocide flow® / BB-RSR disperss®	667 / 1000	200
7	08/08/2025	Kocide flow® / BB-RSR disperss®	667 / 1000	200
8	08/14/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200
9	08/22/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200
10	08/29/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200
11	09/05/2025	Kocide flow® / BB-RSR disperss®	667 / 1000	200
12	09/12/2025	Kocide Flow® / BB-RSR Disperss®	667 / 1000	200

† Kocide flow® contains 30 % Cu, and BB-RSR disperss® contains 20 % Cu