

Supplementary Results – Nicolas Navarre - *Development of a quantitative tool for environmentally sustainable copper fungicide application and tracking within vineyards.*

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Table SR1. Spray events and dosages of each simulated year with all model systems used, including standard practice (SP) reference dosages adapted from Pellegrini et al. (2010).

Date	Copper Dose (kgCu/ha)										
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	SP
18-04											200
25-04											200
02-05											400
07-05			250					50			
09-05											400
11-05								50			
13-05			400								
14-05			450							150	
16-05											600
17-05				100							
18-05			500		50						
19-05			500					50			
20-05								25			
23-05											600
26-05				600		300					
27-05										450	
28-05					50						
29-05					25						
30-05			650	200		175					
31-05					50	175					
01-06					25	200				500	
02-06				225	50						
03-06					50				900		
04-06			700						300		
06-06											1000
07-06				550						600	
09-06										325	
10-06			750							325	
11-06			375	600				500			
12-06		600					700				
13-06		600			350	975	350				1000
14-06						325					
16-06								550			
17-06					450						

18-06		650									
20-06											1000
25-06						750					
26-06						750					
27-06			750								1000
28-06							375				
01-07							750				
02-07							375				
03-07		750									
04-07	750						750				1000
05-07				750						1125	
06-07										375	
07-07	375		750				750				
08-07				1125							
11-07											1000
12-07			750				1125				
13-07			750				375				
17-07			375								
18-07	750										1000
20-07					750					750	
24-07							750				
25-07			1125		375			750	750		1000
26-07			750								
28-07					750		375				
29-07					375		750				
04-08									750		
05-08			1125								
06-08				750							
08-08			375								
12-08								750		750	1000
13-08								750			
Total	1875	2600	11325	4900	3350	10025	4050	1975	1200	5350	11400

Table SR2. Spray events and dosages of each simulated year excluding dynamic LAI dosage.

Date	Copper Dose (kgCu/ha)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
07-05			750					50		
09-05										
11-05								50		
13-05			750							
14-05			750							750
17-05				750						
18-05			750		50					
19-05			750					50		
20-05								375		
26-05				1500		750				
27-05										750
28-05					750					
29-05					375					
30-05			750	375		375				
31-05					750	375				
01-06					375	375				750
02-06				375	375					
03-06					375				1125	
04-06			750					375		
07-06				750						750
09-06										375
10-06			750							375
11-06			375	750				750		
12-06		750					750			
13-06		750			750	1125	375			
14-06						375				
16-06								750		
17-06					750					
18-06		750								
25-06						750				
26-06						750				
27-06			750							
28-06						375				
01-07						750				
02-07						375				

03-07		750								
04-07	750					750				
05-07				750						1125
06-07										375
07-07	375		750			750				
08-07				1125						
11-07										
12-07			750			1125				
13-07			750			375				
17-07			375							
18-07	750									
20-07					750					750
24-07						750				
25-07			1125		375		750	750		
26-07			750							
28-07					750	375				
29-07					375	750				
04-08								750		
05-08			1125							
06-08				750						
08-08			375							
12-08							750			750
13-08							750			
Total	1875	3000	13125	7125	6800	11250	4125	2775	1500	6750

Table SR3. Spray events and dosages of each simulated year assuming a 10% improvement in spray efficiency.

Date	Copper Dose (kgCu/ha)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
07-05			250					50		
11-05								50		
13-05			350							
14-05			350							100
17-05				100						
18-05			400		50					
19-05			450					50		
20-05								25		
26-05				500		250				
27-05										350
28-05					50					
29-05					25					
30-05			550	150		150				
31-05					50	150				
01-06					25	150				450
02-06				200	25					
03-06					25				750	
04-06			600						250	
07-06				450						500
09-06										275
10-06			600							275
11-06			300	500				400		
12-06		500					550			
13-06		500			300	825	300			
14-06						275				
16-06								450		
17-06					350					
18-06		550								
25-06						600				
26-06						600				
27-06			600							
28-06						300				
01-07						600				
02-07						300				
03-07		600								

04-07	600					600				
05-07				600						900
06-07										300
07-07	300		600			600				
08-07				900						
12-07			600			900				
13-07			600			300				
17-07			300							
18-07	600									
20-07					600					600
24-07						600				
25-07			900		300		600	600		
26-07			600							
28-07					600	300				
29-07					300	600				
04-08							600			
05-08			900							
06-08				600						
08-08			300							
12-08							600			600
13-08							600			
Total	1500	2150	9250	4000	2700	8100	3250	1625	1000	4350

Table SR4. Spray events and dosages of each simulated year assuming a 10% improvement in grapevine bioresistance.

Date	Copper Dose (kgCu/ha)									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
07-05			250					50		
11-05								50		
13-05			400							
14-05			400							100
17-05				100						
18-05			450		50					
19-05			450					50		
20-05								25		
26-05				500		300				
27-05										400
28-05					50					
29-05					25					
30-05			600	175		150				
31-05					50	175				
01-06					25	175				450
02-06				225	50					
03-06					50				825	
04-06			650						275	
07-06				500						550
09-06										300
10-06			650							300
11-06			325	550				450		
12-06		550					600			
13-06		550			300	900	325			
14-06						300				
16-06								500		
17-06					400					
18-06		600								
25-06						650				
26-06						650				
27-06			650							
28-06						325				
01-07						650				
02-07						325				
03-07		650								

04-07	650					650				
05-07				650						975
06-07										325
07-07	325		650			650				
08-07				975						
12-07			650							975
13-07			650							325
17-07			325							
18-07	650									
20-07					650					650
24-07						650				
25-07			975		325		650	650		
26-07			650							
28-07					650	325				
29-07					325	650				
04-08								650		
05-08			975							
06-08				650						
08-08			325							
12-08							650			650
13-08							650			
Total	1625	2350	10025	4325	2950	8825	3525	1775	1100	4700