

FINAL REPORT

COUNTRY/YEAR	Italy/2022
TEST SYSTEM/CROP	Grapevine (VITVI)
TARGETS	<i>Biostimulant/effect on grape and wine</i>
TEST SUBSTANCE	GROWMAS
SPONSOR	ECOLUTION AG
SPONSOR STUDY CODE	---
TEST FACILITY	AGREA s.r.l. Via Garibaldi 5 int. 16 37057 S. Giovanni Lupatoto (VR) - ITALY
STUDY CODE	Gep041-22-el
GEP TRIAL (Y/N)	Y


STUDY DIRECTOR VALIDATION

The present study was made in compliance with:

- D.L. 17 Marzo 1995 n. 194, accomplishment of Directive 91/414/CEE, substituted by **REGULATION (EC) No 1107/2009**.
- OEPP/EPPO principles on Good Experimental Practice, Guidelines on Efficacy Evaluation of Plant Protection Product n. 135, 152, 181, and the specific guideline.

Date 12 Oct 2022

POSENATO GABRIELE
(Study Director)



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STORAGE OF STUDY DOCUMENTS

Final report, raw data, amendments and experimental notebook, samples of test and reference substances and specimens (if any) will be stored for 10 years in:

AGREA s.r.l., Via Garibaldi 5 int. 16, 37057 San Giovanni Lupatoto (VR)

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Site Description

EFFECT OF GROWMAS ON QUALITY ON GRAPE AND WINE

Trial ID:GEP041	Location:	VERONA	Trial Year:2022
Protocol ID:	Investigator (Creator):	Gabriele Posenato	
Project ID:	Study Director:	Gabriele Posenato	
	Sponsor Contact:		

General Trial Information

Study Director:Gabriele Posenato
Investigator:Andrea Micheloni

Discipline:F biostimulant
Trial Status:F one-year/final
Trial Status Date:12/Oct/2022
ARM Trial Created On:11/May/2022
Initiation Date:5/May/2022
Completion Date:12/Oct/2022

Trial Usage/Type:SCR registration

Test Facility:Agrea srl
GEP Accreditation Number:0247364 28/05/2021

Trial Location

City:Ronco all'Adige
State/Prov.:Verona VR
Postal Code:37055
Country:ITA Italy
Region:Veneto
Climate Zone:EPOMED EPPO Mediterranean

Latitude of LL Corner °:45,337824 N
Longitude of LL Corner °:11,20906 E ITAVR 45,83275599 - 45,05279873
GPS Accuracy of LL Corner:10 m 11,49111107 - 10,62293685
Altitude of LL Corner:21,00 m
Time Zone:Europe/Rome
GPS Target:G GPS for trial site

Conducted Under GLP:No
Conducted Under GEP:Yes
Official Trial ID:gep041-22-el

Study Rules:Default

No.	Guideline	Discipline	Description
2.	PP 1/135(4)	GS	Phytotoxicity assessment
3.	PP 1/152(4)	GS	Design and analysis of efficacy evaluation trials
4.	PP 1/181(5)	GS	Conduct and reporting of efficacy evaluation trials, including GEP

Conclusions

The trial was carried out in an vineyard in Ronco all'Adige, Veneto region. The variety was Merlot. The season was characterized by a long dry period in Spring and Summer with hot temperatures above average. **No phytotoxicity symptoms were observed.** Interesting result on tasting wine after micro vinification regarding the treated plots with GROWMAS. See the table. **No differences on sugar alcohol transformation dynamic. No differences between treatments. Growmas has not side effect on vinification. In the harmony of wine and general score, the wine sample obtained from treated bunches with GROWMAS showed best result,** statistic different from untreated and normal copper cover during the season. This result opens up future scenarios for the use of GROWMAS as a biostimulant.

Contacts

Role:STYDIR study director
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City:San Giovanni Lupatoto
Role:INVEST investigator
Investigator:Andrea Micheloni
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Crop 1:C VITVI Vitis vinifera
Entry Date:11/May/2022
Variety:MERLOT
Rows per Plot:1
Row Spacing:3 m
Spacing within Row:1 m
Rootstock:SO4

Crop Description
 European Grape
Stage Scale:BBCH

BBCH Scale:BGRA

Treated Plot Width:3 m
Treated Plot Length:7 m
Treated Plot Area:21,0 m²
Replications:4
% Slope:0

Treatments:5

Site and Design

Site Type:VINEYA vineyard
Experimental Unit:1 PLOT plot
Tillage Type:CONTIL conventional-till
Study Design:RACOB L Randomized Complete Block (RCB)

Untreated Arrangement:INCLUDED single control randomized in each block

Soil Description

% Sand:24 **% OM:**3,6
% Silt:66 **pH:**7,6
% Clay:10
Soil Drainage:G good

Texture:L loam
Fert. Level:G good



Application Description

	A	B	C	D	E	F
Application Date	11/May/2022	18/May/2022	25/May/2022	1/Jun/2022	8/Jun/2022	15/Jun/2022
Interval to Prev. Appl.		7 DAYS	7 DAYS	7 DAYS	7 DAYS	7 DAYS
Application Method	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Placement	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temperature Start, Stop	24; - C	23; - C	20; - C	24; - C	25; - C	25; - C
% Relative Humidity Start, Stop	56; -	60; -	80; -	73; -	51; -	55; -
Wet Leaves (Y/N)	N; no	N; no	N; no	N; no	N; no	N; no
Soil Moisture	DRY	DRY	DRY	DRY	DRY	DRY
% Cloud Cover	0	0	0	0	0	0
Weather Source	WSFIELD	WSFIELD	WSFIELD	WSFIELD	WSFIELD	WSFIELD
	G	H	I	J	K	L
Application Date	22/Jun/2022	25/Jun/2022	30/Jun/2022	5/Jul/2022	8/Jul/2022	15/Jul/2022
Interval to Prev. Appl.	7 DAYS	3 DAYS	5 DAYS	5 DAYS	3 DAYS	7 DAYS
Application Method	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY	SPRAY
Application Placement	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL	BROFOL
Air Temperature Start, Stop	26; - C	27; - C	27; - C	27; - C	26; - C	29; - C
% Relative Humidity Start, Stop	56; -	48; -	61; -	65; -	53; -	49; -
Wet Leaves (Y/N)	N; no	N; no	N; no	N; no	N; no	N; no
Soil Moisture	DRY	DRY	DRY	DRY	DRY	DRY
% Cloud Cover	0	0	0	0	0	0
Weather Source	WSFIELD	WSFIELD	WSFIELD	WSFIELD	WSFIELD	WSFIELD
	M					
Application Date	27/Jul/2022					
Interval to Prev. Appl.	12 DAYS					
Application Method	SPRAY					
Application Placement	BROFOL					
Air Temperature Start, Stop	24; - C					
% Relative Humidity Start, Stop	64; -					
Wet Leaves (Y/N)	N; no					
Soil Moisture	WET					
% Cloud Cover	0					
Weather Source	WSFIELD					

Crop Stage At Each Application

	A	B	C	D
Crop 1 Code, BBCH Scale	VITVI; BGRA	VITVI; BGRA	VITVI; BGRA	VITVI; BGRA
Stage Scale Used	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent	14; -	53; -	57; -	65; -
Growth Condition	NO; normal	NO; normal	NO; normal	NO; normal
Diameter Average	30 cm	50 cm	70 cm	70 cm
Treated Canopy Height	30 cm	70 cm	90 cm	120 cm
Treated Leaf Wall Area	2000 m2/ha	4667 m2/ha	6000 m2/ha	8000 m2/ha
Treated LWA Formula	$2*0.3*10000/3$	$2*0.7*10000/3$	$2*0.9*10000/3$	$2*1.2*10000/3$
Treated LWA per Plot	4,2 m2/plot	9,8 m2/plot	12,6 m2/plot	16,8 m2/plot
Treated Tree Row Volume	300 m3/ha	1167 m3/ha	2100 m3/ha	2800 m3/ha
Treated TRV Formula	$(0.3*0.3*10000)/3$	$(0.7*0.5*10000)/3$	$(0.9*0.7*10000)/3$	$(1.2*0.7*10000)/3$
Treated TRV per Plot	0,63 m3/plot	2,45 m3/plot	4,41 m3/plot	5,88 m3/plot
	E	F	G	H
Crop 1 Code, BBCH Scale	VITVI; BGRA	VITVI; BGRA	VITVI; BGRA	VITVI; BGRA
Stage Scale Used	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent	71; -	73; -	75; -	75; -
Growth Condition	NO; normal	NO; normal	NO; normal	NO; normal
Diameter Average	70 cm	70 cm	70 cm	70 cm
Treated Canopy Height	120 cm	120 cm	120 cm	120 cm
Treated Leaf Wall Area	8000 m2/ha	8000 m2/ha	8000 m2/ha	8000 m2/ha
Treated LWA Formula	$2*1.2*10000/3$	$2*1.2*10000/3$	$2*1.2*10000/3$	$2*1.2*10000/3$
Treated LWA per Plot	16,8 m2/plot	16,8 m2/plot	16,8 m2/plot	16,8 m2/plot
Treated Tree Row Volume	2800 m3/ha	2800 m3/ha	2800 m3/ha	2800 m3/ha
Treated TRV Formula	$(1.2*0.7*10000)/3$	$(1.2*0.7*10000)/3$	$(1.2*0.7*10000)/3$	$(1.2*0.7*10000)/3$
Treated TRV per Plot	5,88 m3/plot	5,88 m3/plot	5,88 m3/plot	5,88 m3/plot
	I	J	K	L
Crop 1 Code, BBCH Scale	VITVI; BGRA	VITVI; BGRA	VITVI; BGRA	VITVI; BGRA
Stage Scale Used	BBCH	BBCH	BBCH	BBCH
Stage Majority, Percent	75; -	77; -	77; -	77; -
Growth Condition	NO; normal	NO; normal	NO; normal	NO; normal
Diameter Average	70 cm	70 cm	70 cm	70 cm
Treated Canopy Height	120 cm	120 cm	120 cm	120 cm
Treated Leaf Wall Area	8000 m2/ha	8000 m2/ha	8000 m2/ha	8000 m2/ha
Treated LWA Formula	$2*1.2*10000/3$	$2*1.2*10000/3$	$2*1.2*10000/3$	$2*1.2*10000/3$
Treated LWA per Plot	16,8 m2/plot	16,8 m2/plot	16,8 m2/plot	16,8 m2/plot
Treated Tree Row Volume	2800 m3/ha	2800 m3/ha	2800 m3/ha	2800 m3/ha
Treated TRV Formula	$(1.2*0.7*10000)/3$	$(1.2*0.7*10000)/3$	$(1.2*0.7*10000)/3$	$(1.2*0.7*10000)/3$
Treated TRV per Plot	5,88 m3/plot	5,88 m3/plot	5,88 m3/plot	5,88 m3/plot
	M			
Crop 1 Code, BBCH Scale	VITVI; BGRA			
Stage Scale Used	BBCH			
Stage Majority, Percent	81; -			
Growth Condition	NO; normal			
Diameter Average	70 cm			
Treated Canopy Height	120 cm			
Treated Leaf Wall Area	8000 m2/ha			
Treated LWA Formula	$2*1.2*10000/3$			
Treated LWA per Plot	16,8 m2/plot			
Treated Tree Row Volume	2800 m3/ha			
Treated TRV Formula	$(1.2*0.7*10000)/3$			
Treated TRV per Plot	5,88 m3/plot			

Application Equipment

	A	B	C	D	E	F
Appl. Equipment	Backpak FOX	Backpak FOX	Backpak FOX	Backpak FOX	Backpak FOX	Backpak FOX
Equipment Type	BACSPR	BACSPR	BACSPR	BACSPR	BACSPR	BACSPR
Operation Pressure	3 BAR	3 BAR	3 BAR	3 BAR	3 BAR	3 BAR
Nozzle Model	3-fork	3-fork	3-fork	3-fork	3-fork	3-fork
Nozzle Type	CONHOL	CONHOL	CONHOL	CONHOL	CONHOL	CONHOL
Nozzle Spacing	5 cm	5,0 cm	5,0 cm	5,0 cm	5,0 cm	5,0 cm
Spray Quality	F; fine	F; fine	F; fine	F; fine	F; fine	F; fine
Row Sides Applied	2	2	2	2	2	2
Carrier	WATER	WATER	WATER	WATER	WATER	WATER
Application Amount	400 L/ha	600 L/ha	800 L/ha	1000 L/ha	1000 L/ha	1000 L/ha
Minimum Mix/Treatment	3,36 L	5,04 L	6,72 L	8,4 L	8,4 L	8,4 L
Mix Overage	2640,0 mL	2960,0 mL	2580,0 mL	600,0 mL	600,0 mL	600,0 mL
Mix Size	6,0 L	8,0 L	9,0 L	9,0 L	9,0 L	9,0 L
Tank Mix (Y/N)	N; no	N; no	N; no	N; no	N; no	N; no
	G	H	I	J	K	L
Appl. Equipment	Backpak FOX	Backpak FOX	Backpak FOX	Backpak FOX	Backpak FOX	Backpak FOX
Equipment Type	BACSPR	BACSPR	BACSPR	BACSPR	BACSPR	BACSPR
Operation Pressure	3 BAR	3 BAR	3 BAR	3 BAR	3 BAR	3 BAR
Nozzle Model	3-fork	3-fork	3-fork	3-fork	3-fork	3-fork
Nozzle Type	CONHOL	CONHOL	CONHOL	CONHOL	CONHOL	CONHOL
Nozzle Spacing	5,0 cm	5,0 cm	5,0 cm	5,0 cm	5,0 cm	5,0 cm
Spray Quality	F; fine	F; fine	F; fine	F; fine	F; fine	F; fine
Row Sides Applied	2	2	2	2	2	2
Carrier	WATER	WATER	WATER	WATER	WATER	WATER
Application Amount	1000 L/ha	1000 L/ha	1000 L/ha	1000 L/ha	1000 L/ha	1000 L/ha
Minimum Mix/Treatment	8,4 L	8,4 L	8,4 L	8,4 L	8,4 L	8,4 L
Mix Overage	600,0 mL	600,0 mL	600,0 mL	600,0 mL	600,0 mL	600,0 mL
Mix Size	9,0 L	9,0 L	9,0 L	9,0 L	9,0 L	9,0 L
Tank Mix (Y/N)	N; no	N; no	N; no	N; no	N; no	N; no
	M					
Appl. Equipment	Backpak FOX					
Equipment Type	BACSPR					
Operation Pressure	3 BAR					
Nozzle Model	3-fork					
Nozzle Type	CONHOL					
Nozzle Spacing	5,0 cm					
Spray Quality	F; fine					
Row Sides Applied	2					
Carrier	WATER					
Application Amount	1000 L/ha					
Minimum Mix/Treatment	8,4 L					
Mix Overage	600,0 mL					
Mix Size	9,0 L					
Tank Mix (Y/N)	N; no					

Additional Information (Validation List Comments)

F, one-year/final = one-year/final|6

Verona, VR = ITA

EPOMED, EPPO Mediterranean = EPPO

N = North

E = East

m = meter

m = meters

G, GPS for trial site = 1

Europe/Rome = ITA|+01:00|+02:00

N = N=no

X = X=yes

Default = Standard validation for ARM GDMDef trials

PP 1/135(4), GS, Phytotoxicity assessment = EPPO|General Standards

PP 1/152(4), GS, Design and analysis of efficacy evaluation trials = EPPO|General Standards

PP 1/181(5), GS, Conduct and reporting of efficacy evaluation trials, including GEP = EPPO|General Standards

STYDIR, study director = study director

INVEST, investigator = investigator

SPONSR, sponsor = sponsor

COOPER, cooperator = cooperator

C = EPPO species (Bayer) codes

VITVI, BGRA, Vitis vinifera, European Grape = US
BBCH = BBCH uniform plant stages
VINEYA, vineyard = vineyard
PLOT, plot = plot
CONTIL, conventional-till = conventional-till
RACOB, Randomized Complete Block (RCB) = Randomized Complete Block (RCB)
INCLUDED, single control randomized in each block = single control randomized in each block
L, loam = loam
G, good = good
G, good = Good / medium / adequate drainage with aeration not likely to harm crop growth
SPRAY = spray
BROFOL = broadcast - foliar
C = Celsius
N, no = no
DRY = dry|A
WSFIELD = Weather Station - Field Site
WET = wet|A
14 = 4th leaves unfolded|BGRA
, normal = normal
cm = centimeter
53 = Inflorescences clearly visible|BGRA
57 = Inflorescences fully developed, flowers separating|BGRA
65 = Full flowering: 50% of flowerhoods fallen|BGRA
71 = Fruit set: young fruits begin to swell, remains of flowers lost|BGRA
73 = Berries groat-sized, bunches begin to hang|BGRA
75 = Berries pea-sized, bunches hang|BGRA
77 = Berries beginning to touch|BGRA
81 = Beginning of ripening: berries begin to develop variety-specific colour|BGRA
BACSPR = backpack sprayer, knapsack sprayer, hand held sprayer|use SPRBAC instead for backpack, knapsack, hand-held sprayers
BAR = bar
CONHOL = hollow cone
F, fine = fine
WATER = water
L/ha = liters per hectare
mL = milliliters
L = liters of mix|for liquid sprays using a diluent
STATUS = Trial Status

Treatments

Trt No.	Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Appl Code
1	UNTREATED						
2	CUPROFIX ULTRA DISPERS	40%		WG	120g/100 l		ABCDEFGHIKLM
3	GROWMAS			EW	5l/ha		ABCDEFGHIKLM
4	GROWMAS			EW	3l/ha		ABCDEFGHIKLM
5	CUPROFIX ULTRA DISPERS	40%		WG	120g/100 l		ABCD
	GROWMAS			EW	3l/ha		EFHJLM

Additional Treatment Information

Type

CHK = Check or Untreated

Form Unit

% = percent active ingredient in formulated product on a weight/weight basis (same as %aw/w)

Form Type

WG = water dispersible granules|Dry||A formulation consisting of granules to be applied after disintegration and dispersion in water.

EW = emulsion, oil in water|Liquid||A fluid, heterogeneous formulation consisting of a solution of pesticide in an organic liquid dispersed as fine globules in a continuous water phase.

Rate Unit

g/100 L = Grams Dry Product per 100 Liters Mix (US=g/100 GAL)|EQ

L/ha = Liters Product per Hectare (US=GAL/A)|T

Standardized Summary

Crop Type, Code				C; VITVI	C; VITVI	C; VITVI	C; VITVI
BBCH Scale				BGRA	BGRA	BGRA	BGRA
Crop Scientific Name				Vitis vinifera	Vitis vinifera	Vitis vinifera	Vitis vinifera
Crop Name				European Grape	European Grape	European Grape	European Grape
Crop Variety				merlot	merlot	merlot	merlot
Description				Babo degree	Ind. of maturaz.	reduc. sugar	total acidity
Rating Date				27/Aug/2022	27/Aug/2022	27/Aug/2022	27/Aug/2022
Number of Subsamples				1	1	1	1
Days After First/Last Applic.				108; 31	108; 31	108; 31	108; 31
ARM Action Codes				s05	s05	s05	s05
Number of Decimals				2	2	2	2
Trt Treatment		Rate	Appl	1	2	3	4
No. Name		Rate Unit	Code				
1 UNTREATED				18,58a	142,3a	208,65a	6,51a
2 CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGIKLM		18,53a	136,5a	208,15a	6,71a
3 GROWMAS	5l/ha	ABCDEFGIKLM		19,68a	154,8a	223,08a	6,34a
4 GROWMAS	3l/ha	ABCDEFGIKLM		19,28a	152,5a	218,80a	6,26a
5 CUPROFIX ULTRA DISPERS	120g/100 l	ABCD		18,65a	141,8a	210,13a	6,54a
GROWMAS	3l/ha	EFHJLM					
LSD P=Various				1,317	24,19	17,458	0,701
Standard Deviation				0,855	15,70	11,331	0,455
CV				4,51	10,79	5,3	7,03
Levene's F^				1,576	0,587	1,332	0,888
Levene's Prob(F)				0,232	0,677	0,303	0,495
Skewness^				-0,4629	-0,0872	-0,4563	0,1605
Kurtosis^				-1,0165	-1,2403	-0,9812	-1,2513
Mean Sep. Test				SNK.05	SNK.05	SNK.05	SNK.05
Replicate F				8,095	5,482	8,349	2,954
Replicate Prob(F)				0,0032	0,0132	0,0029	0,0755
Treatment F				1,427	0,975	1,425	0,620
Treatment Prob(F)				0,2842	0,4570	0,2847	0,6568

Means followed by same letter or symbol do not significantly differ

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

^Calculated from residual.



Crop Type, Code				C; VITVI	C; VITVI	C; VITVI	C; VITVI
BBCH Scale				BGRA	BGRA	BGRA	BGRA
Crop Scientific Name				Vitis vinifera	Vitis vinifera	Vitis vinifera	Vitis vinifera
Crop Name				European Grape	European Grape	European Grape	European Grape
Crop Variety				merlot	merlot	merlot	merlot
Description				pH	Malic Acid	Tart. Acid	K read. assimil>
Rating Date				27/Aug/2022	27/Aug/2022	27/Aug/2022	27/Aug/2022
Number of Subsamples				1	1	1	1
Days After First/Last Applic.				108; 31	108; 31	108; 31	108; 31
ARM Action Codes				s05	s05	s05	s05
Number of Decimals				2	2	2	2
Trt No.	Treatment Name	Rate	Appl Unit Code	5	6	7	8
1	UNTREATED			3,35a	1,28a	8,42a	223,25a
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	3,34a	1,46a	8,62a	208,50a
3	GROWMAS	5l/ha	ABCDEFGHIKLM	3,39a	1,50a	8,20a	252,50a
4	GROWMAS	3l/ha	ABCDEFGHIKLM	3,35a	1,18a	8,47a	227,50a
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	3,34a	1,30a	8,45a	230,00a
	GROWMAS	3l/ha	EFHJLM				
LSD P=Various				0,063	0,287	0,575	35,494
Standard Deviation				0,041	0,186	0,373	23,038
CV				1,22	13,86	4,42	10,09
Levene's F^				1,306	0,473	0,234	0,078
Levene's Prob(F)				0,312	0,755	0,915	0,988
Skewness^				-0,2826	0,1803	-0,6381	-0,0944
Kurtosis^				-1,1238	-0,829	-0,7386	0,4179
Mean Sep. Test				SNK.05	SNK.05	SNK.05	SNK.05
Replicate F				1,940	1,556	9,037	0,788
Replicate Prob(F)				0,1770	0,2512	0,0021	0,5235
Treatment F				1,110	2,066	0,657	1,897
Treatment Prob(F)				0,3963	0,1486	0,6335	0,1758

Means followed by same letter or symbol do not significantly differ

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

^Calculated from residual.

Crop Type, Code				C; VITVI	C; VITVI	C; VITVI	
BBCH Scale				BGRA	BGRA	BGRA	
Crop Scientific Name				Vitis vinifera	Vitis vinifera	Vitis vinifera	
Crop Name				European Grape	European Grape	European Grape	
Crop Variety				merlot	merlot	merlot	wine merlot
Description				K	optical density>	kg/vine	limpidity
Rating Date				27/Aug/2022	27/Aug/2022	27/Aug/2022	28/Sep/2022
Number of Subsamples				1	1	1	1
Days After First/Last Applic.				108; 31	108; 31	108; 31	140; 63
ARM Action Codes				s05	s05	s05	s05
Number of Decimals					3		
Trt No.	Treatment Name	Rate	Appl Code	9	10	11	12
1	UNTREATED			1950,0a	0,230a	3,00a	3,0a
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	2000,0a	0,316a	2,83a	
3	GROWMAS	5l/ha	ABCDEFGHIKLM	2025,0a	0,156a	3,10a	3,0a
4	GROWMAS	3l/ha	ABCDEFGHIKLM	1875,0a	0,141a	2,78a	
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	1925,0a	0,237a	3,00a	3,3a
	GROWMAS	3l/ha	EFHJLM				
LSD P=	Various			118,51	0,1366	0,304	0,50
Standard Deviation				76,92	0,0887	0,197	0,29
CV				3,93	41,1	6,71	9,36
Levene's F^				0,808	1,394	0,779	
Levene's Prob(F)				0,539	0,283	0,556	
Skewness^				-0,1762	1,3727*	-0,1524	3,4641*
Kurtosis^				-0,2123	0,2165	1,1064	12,0*
Mean Sep. Test				SNK.05	SNK.05	SNK.05	SNK.05
Replicate F				0,085	3,340	1,610	1,000
Replicate Prob(F)				0,9672	0,0560	0,2388	0,4547
Treatment F				2,408	2,519	1,882	1,000
Treatment Prob(F)				0,1069	0,0964	0,1783	0,4219

Means followed by same letter or symbol do not significantly differ

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

^Calculated from residual.



Crop Type, Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Crop Variety				wine merlot	wine merlot	wine merlot	wine merlot	wine merlot
Description				hue	intensity	frankness	intensity	refinement
Rating Date				28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples				1	1	1	1	1
Days After First/Last Applic.				140; 63	140; 63	140; 63	140; 63	140; 63
ARM Action Codes				s05	s05	s05	s05	s05
Number of Decimals								
Trt No.	Treatment Name	Rate	Appl Unit Code	13	14	15	16	17
1	UNTREATED			4,3a	4,8a	4,5b	6,0a	5,8a
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM					
3	GROWMAS	5l/ha	ABCDEFGHIKLM	4,0a	4,5a	6,0a	6,5a	6,5a
4	GROWMAS	3l/ha	ABCDEFGHIKLM					
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	4,5a	4,8a	4,8b	5,5a	5,8a
	GROWMAS	3l/ha	EFHJLM					
LSD P=Various				1,19	1,12	1,19	1,29	1,12
Standard Deviation				0,69	0,65	0,69	0,75	0,65
CV				16,17	13,83	13,52	12,42	10,76
Levene's F^				0,429	0,50	7,00	1,00	0,167
Levene's Prob(F)				0,664	0,622	0,015*	0,405	0,849
Skewness^				-0,1703	-0,8124	-0,1848	-0,7551	0,0
Kurtosis^				-0,0913	-1,65	-1,8655	0,1613	-0,8556
Mean Sep. Test				SNK.05	SNK.05	SNK.05	SNK.05	SNK.05
Replicate F				0,647	0,000	0,647	2,800	1,600
Replicate Prob(F)				0,6128	1,0000	0,6128	0,1310	0,2853
Treatment F				0,529	0,200	5,471	1,800	1,800
Treatment Prob(F)				0,6141	0,8240	0,0444	0,2441	0,2441

Means followed by same letter or symbol do not significantly differ

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

^Calculated from residual.



Crop Type, Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Crop Variety				wine merlot	wine merlot	wine merlot	wine merlot	wine merlot
Description				harmony	frankness	intensity	intensity	body
Rating Date				28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples				1	1	1	1	1
Days After First/Last Applic.				140; 63	140; 63	140; 63	140; 63	140; 63
ARM Action Codes				s05	s05		TS[20] s05	s05
Number of Decimals							2	
Trt No.	Treatment Name	Rate	Appl Code	18	19	20	21	22
		Unit					TS[20]	
1	UNTREATED			6,0a	4,3a	5,8	2,50a	5,8a
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM					
3	GROWMAS	5l/ha	ABCDEFGHIKLM	6,0a	5,0a	6,8	2,69a	6,8a
4	GROWMAS	3l/ha	ABCDEFGHIKLM					
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	5,8a	4,8a	5,8	2,50a	6,3a
	GROWMAS	3l/ha	EFHJLM					
LSD P=Various				1,26	1,85	0,82	0,164	1,73
Standard Deviation				0,73	1,07	0,47	0,095	1,00
CV				12,28	22,87	7,75	3,69	16,0
Levene's F^				0,273	0,30	0,00	0,002	1,333
Levene's Prob(F)				0,767	0,748	0,00*	0,998	0,311
Skewness^				0,0862	-0,1387	-0,0862	-0,2079	-0,5669
Kurtosis^				-0,1896	-0,2538	-0,1896	-0,0966	-1,4465
Mean Sep. Test				SNK.05	SNK.05		SNK.05	SNK.05
Replicate F				1,000	0,195	1,375	1,331	0,083
Replicate Prob(F)				0,4547	0,8960	0,3376	0,3492	0,9667
Treatment F				0,158	0,512	6,000	5,544	1,000
Treatment Prob(F)				0,8574	0,6232	0,0370	0,0433	0,4219

Means followed by same letter or symbol do not significantly differ

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

^Calculated from residual.



Crop Type, Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Crop Variety				wine merlot	wine merlot	wine merlot	wine merlot	wine merlot
Description				harmony	lingering	aftertaste	aftertaste	General score
Rating Date				28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples				1	1	1	1	1
Days After First/Last Applic.				140; 63	140; 63	140; 63	140; 63	140; 63
ARM Action Codes				s05	s05		TL[25] s05	s05
Number of Decimals							2	
Trt No.	Treatment Name	Rate	Appl Unit Code	23	24	25	26	27
1	UNTREATED			5,0b	6,3a	3,3	0,63b	70,0b
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM					
3	GROWMAS	5l/ha	ABCDEFGHIKLM	6,5a	6,5a	5,0	0,78a	81,0a
4	GROWMAS	3l/ha	ABCDEFGHIKLM					
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	5,8ab	5,8a	4,3	0,72a	72,5b
	GROWMAS	3l/ha	EFHJLM					
LSD P=Various				0,87	1,44	0,76	0,067	6,65
Standard Deviation				0,50	0,83	0,44	0,039	3,84
CV				8,7	13,51	10,58	5,51	5,16
Levene's F^				3,00	1,50	0,00	0,51	1,147
Levene's Prob(F)				0,10	0,274	0,00*	0,617	0,36
Skewness^				0,4776	-0,2623	-0,3541	-0,5042	0,0176
Kurtosis^				-0,8683	-0,6851	-1,4473	-1,2735	-0,8055
Mean Sep. Test				SNK.05	SNK.05		SNK.05	SNK.05
Replicate F				0,333	0,160	0,571	0,579	0,098
Replicate Prob(F)				0,8022	0,9194	0,6542	0,6500	0,9584
Treatment F				9,000	0,840	15,857	15,431	9,000
Treatment Prob(F)				0,0156	0,4768	0,0040	0,0043	0,0156

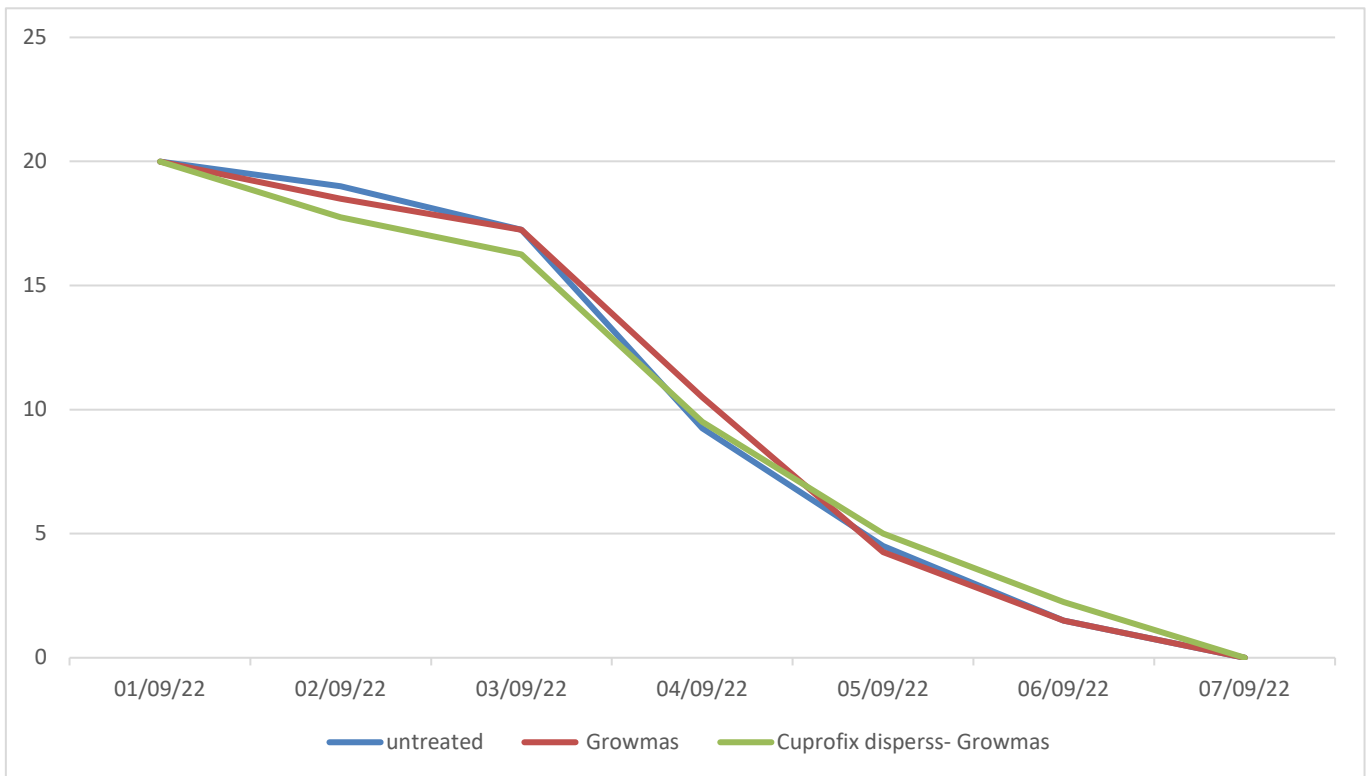
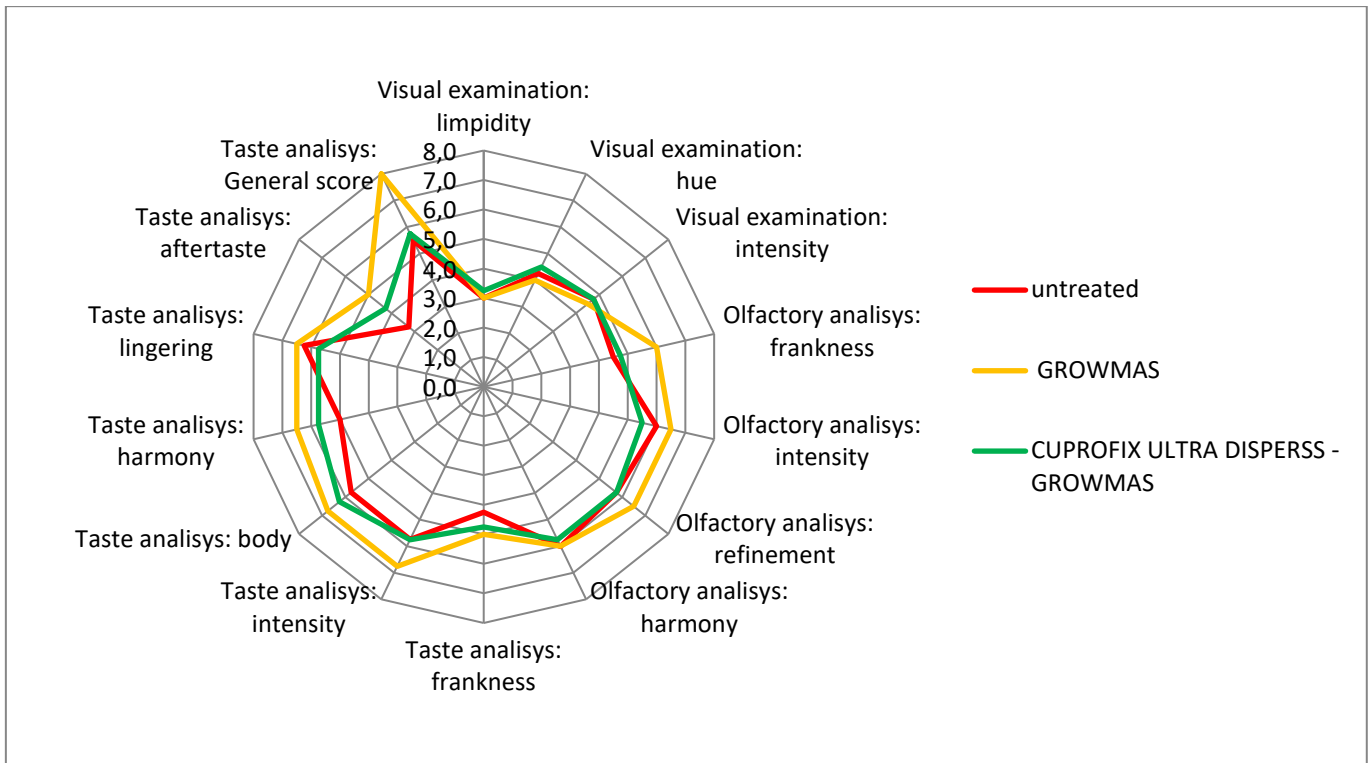
Means followed by same letter or symbol do not significantly differ

Mean comparisons performed only when AOV Treatment P(F) is significant at mean comparison OSL.

^Calculated from residual.

Crop Type, Code
C = EPP0 species (Bayer) codes
VITVI, BGRA, Vitis vinifera, European Grape = US
ARM Action Codes
s05 = Perform 5% Student-Newman-Keuls mean separation on Standardized Summary|NA
TS[20] = SQR([20] + .5)
TL[25] = LOG([25]+ 1)

Results on taste panel



Dynamic of sugar degradation. No differences between treatments. Growmas has not side effect on vinification.

Picture



View of field trial

Raw Data (data assessment summary)

Crop Type, Code					C; VITVI	C; VITVI	C; VITVI
BBCH Scale					BGRA	BGRA	BGRA
Crop Scientific Name					Vitis vinifera	Vitis vinifera	Vitis vinifera
Crop Name					European Grape	European Grape	European Grape
Crop Variety					merlot	merlot	merlot
Description					Babo degree	Ind. of maturaz.	reduc. sugar
Rating Date					27/Aug/2022	27/Aug/2022	27/Aug/2022
Number of Subsamples					1	1	1
Days After First/Last Applic.					108; 31	108; 31	108; 31
ARM Action Codes					s05	s05	s05
Number of Decimals					2	2	2
Trt No.	Treatment Name	Rate	Appl Code	Plot	1	2	3
1	UNTREATED			102	19,80	156,0	224,60
				201	20,20	174,0	230,80
				304	17,90	128,0	199,90
				405	16,40	111,0	179,30
				Mean =	18,58	142,3	208,65
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	19,90	151,0	225,70
				203	19,90	154,0	226,10
				305	17,30	126,0	192,10
				402	17,00	115,0	188,70
				Mean =	18,53	136,5	208,15
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	20,50	168,0	234,20
				205	19,70	164,0	224,30
				302	18,20	125,0	202,80
				401	20,30	162,0	231,00
				Mean =	19,68	154,8	223,08
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	19,30	150,0	218,70
				204	20,40	175,0	234,90
				303	18,80	149,0	211,80
				404	18,60	136,0	209,80
				Mean =	19,28	152,5	218,80
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	101	20,30	174,0	232,60
				202	18,80	131,0	212,40
	GROWMAS	3l/ha	EFHJLM	301	17,80	140,0	198,90
				403	17,70	122,0	196,60
				Mean =	18,65	141,8	210,13



Crop Type, Code					C; VITVI	C; VITVI	C; VITVI
BBCH Scale					BGRA	BGRA	BGRA
Crop Scientific Name					Vitis vinifera	Vitis vinifera	Vitis vinifera
Crop Name					European Grape	European Grape	European Grape
Crop Variety					merlot	merlot	merlot
Description					total acidity	pH	Malic Acid
Rating Date					27/Aug/2022	27/Aug/2022	27/Aug/2022
Number of Subsamples					1	1	1
Days After First/Last Applic.					108; 31	108; 31	108; 31
ARM Action Codes					s05	s05	s05
Number of Decimals					2	2	2
Trt No.	Treatment Name	Rate	Appl Code	Plot	4	5	6
1	UNTREATED			102	6,26	3,37	1,23
				201	5,74	3,41	1,31
				304	6,86	3,30	1,11
				405	7,18	3,31	1,46
				Mean =	6,51	3,35	1,28
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	6,49	3,37	1,52
				203	6,38	3,39	1,64
				305	6,71	3,33	1,39
				402	7,26	3,28	1,30
				Mean =	6,71	3,34	1,46
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	6,05	3,39	1,25
				205	5,96	3,41	1,57
				302	7,12	3,35	1,69
				401	6,22	3,42	1,47
				Mean =	6,34	3,39	1,50
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	6,33	3,34	0,97
				204	5,77	3,36	1,13
				303	6,22	3,39	1,22
				404	6,70	3,32	1,38
				Mean =	6,26	3,35	1,18
5	CUPROFIX ULTRA DISPERS GROWMAS	120g/100 l 3l/ha	ABCD EFHJLM	101	5,77	3,40	1,12
				202	7,09	3,31	1,71
				301	6,20	3,37	1,31
				403	7,11	3,28	1,07
				Mean =	6,54	3,34	1,30

Crop Type, Code					C; VITVI	C; VITVI	C; VITVI
BBCH Scale					BGRA	BGRA	BGRA
Crop Scientific Name					Vitis vinifera	Vitis vinifera	Vitis vinifera
Crop Name					European Grape	European Grape	European Grape
Crop Variety					merlot	merlot	merlot
Description					Tart. Acid	K read. assimil>	K
Rating Date					27/Aug/2022	27/Aug/2022	27/Aug/2022
Number of Subsamples					1	1	1
Days After First/Last Applic.					108; 31	108; 31	108; 31
ARM Action Codes					s05	s05	s05
Number of Decimals					2	2	2
Trt No.	Treatment Name	Rate	Appl Code	Plot	7	8	9
1	UNTREATED			102	8,40	260,00	1900,0
				201	7,28	220,00	2000,0
				304	9,00	220,00	1900,0
				405	9,00	193,00	2000,0
				Mean =	8,42	223,25	1950,0
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	8,36	230,00	2000,0
				203	8,11	210,00	2100,0
				305	9,00	174,00	2000,0
				402	9,00	220,00	1900,0
				Mean =	8,62	208,50	2000,0
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	7,94	240,00	2000,0
				205	7,57	230,00	2000,0
				302	9,00	280,00	2000,0
				401	8,28	260,00	2100,0
				Mean =	8,20	252,50	2025,0
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	8,85	240,00	1900,0
				204	7,64	210,00	1800,0
				303	8,79	220,00	2000,0
				404	8,61	240,00	1800,0
				Mean =	8,47	227,50	1875,0
5	CUPROFIX ULTRA DISPERS GROWMAS	120g/100 l 3l/ha	ABCD EFHJLM	101	7,78	240,00	1900,0
				202	8,38	250,00	1900,0
				301	8,62	230,00	1900,0
				403	9,00	200,00	2000,0
				Mean =	8,45	230,00	1925,0



Crop Type, Code					C; VITVI	C; VITVI		
BBCH Scale					BGRA	BGRA		
Crop Scientific Name					Vitis vinifera	Vitis vinifera		
Crop Name					European Grape	European Grape		
Crop Variety					merlot	merlot	wine merlot	wine merlot
Description					optical density>	kg/vine	limpidity	hue
Rating Date					27/Aug/2022	27/Aug/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples					1	1	1	1
Days After First/Last Applic.					108; 31	108; 31	140; 63	140; 63
ARM Action Codes					s05	s05	s05	s05
Number of Decimals					3			
Trt	Treatment	Rate	Appl	Plot	10	11	12	13
No.	Name	Rate	Unit	Code				
1	UNTREATED			102	0,137	3,00	3,0	4,0
				201	0,196	2,80	3,0	4,0
				304	0,158	3,20	3,0	4,0
				405	0,429	3,00	3,0	5,0
				Mean =	0,230	3,00	3,0	4,3
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	0,146	2,80	.	.
				203	0,271	2,70	.	.
				305	0,404	3,00	.	.
				402	0,441	2,80	.	.
				Mean =	0,316	2,83	.	.
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	0,159	3,10	3,0	4,0
				205	0,189	3,00	3,0	5,0
				302	0,135	3,40	3,0	3,0
				401	0,139	2,90	3,0	4,0
				Mean =	0,156	3,10	3,0	4,0
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	0,142	3,00	.	.
				204	0,148	2,40	.	.
				303	0,141	3,00	.	.
				404	0,133	2,70	.	.
				Mean =	0,141	2,78	.	.
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	101	0,152	3,00	3,0	4,0
	GROWMAS	3l/ha	EFHJLM	202	0,207	3,30	4,0	5,0
				301	0,139	2,80	3,0	5,0
				403	0,448	2,90	3,0	4,0
				Mean =	0,237	3,00	3,3	4,5



Crop Type, Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Crop Variety					wine merlot	wine merlot	wine merlot	wine merlot	wine merlot
Description					intensity	frankness	intensity	refinement	harmony
Rating Date					28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples					1	1	1	1	1
Days After First/Last Applic.					140; 63	140; 63	140; 63	140; 63	140; 63
ARM Action Codes					s05	s05	s05	s05	s05
Number of Decimals									
Trt	Treatment	Rate	Appl	Plot	14	15	16	17	18
No.	Name	Rate	Unit	Code					
1	UNTREATED			102	5,0	5,0	7,0	6,0	7,0
				201	4,0	4,0	6,0	5,0	5,0
				304	5,0	4,0	7,0	6,0	6,0
				405	5,0	5,0	4,0	6,0	6,0
				Mean =	4,8	4,5	6,0	5,8	6,0
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	.	.	.	.	.
				203	.	.	.	.	.
				305	.	.	.	.	.
				402	.	.	.	.	.
				Mean =	.	.	.	.	.
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	5,0	6,0	7,0	7,0	7,0
				205	5,0	6,0	7,0	5,0	5,0
				302	4,0	6,0	6,0	7,0	6,0
				401	4,0	6,0	6,0	7,0	6,0
				Mean =	4,5	6,0	6,5	6,5	6,0
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	.	.	.	.	.
				204	.	.	.	.	.
				303	.	.	.	.	.
				404	.	.	.	.	.
				Mean =	.	.	.	.	.
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	101	4,0	4,0	6,0	5,0	5,0
	GROWMAS	3l/ha	EFHJLM	202	5,0	4,0	6,0	6,0	6,0
				301	5,0	6,0	5,0	6,0	6,0
				403	5,0	5,0	5,0	6,0	6,0
				Mean =	4,8	4,8	5,5	5,8	5,8



Crop Type, Code									
BBCH Scale									
Crop Scientific Name									
Crop Name									
Crop Variety					wine merlot	wine merlot	wine merlot	wine merlot	wine merlot
Description					frankness	intensity	intensity	body	harmony
Rating Date					28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples					1	1	1	1	1
Days After First/Last Applic.					140; 63	140; 63	140; 63	140; 63	140; 63
ARM Action Codes					s05		TS[20] s05	s05	s05
Number of Decimals							2		
Trt	Treatment	Rate	Appl	Plot	19	20	21	22	23
No.	Name	Rate	Unit	Code					
1	UNTREATED			102	5,0	6,0	2,55	5,0	5,0
				201	3,0	6,0	2,55	6,0	5,0
				304	4,0	6,0	2,55	7,0	5,0
				405	5,0	5,0	2,35	5,0	5,0
				Mean =	4,3	5,8	2,50	5,8	5,0
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	.	.	.	.	.
				203	.	.	.	.	.
				305	.	.	.	.	.
				402	.	.	.	.	.
				Mean =	.	.	.	.	.
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	5,0	7,0	2,74	7,0	7,0
				205	6,0	7,0	2,74	6,0	6,0
				302	4,0	7,0	2,74	7,0	7,0
				401	5,0	6,0	2,55	7,0	6,0
				Mean =	5,0	6,8	2,69	6,8	6,5
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	.	.	.	.	.
				204	.	.	.	.	.
				303	.	.	.	.	.
				404	.	.	.	.	.
				Mean =	.	.	.	.	.
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	101	4,0	6,0	2,55	6,0	6,0
	GROWMAS	3l/ha	EFHJLM	202	4,0	6,0	2,55	7,0	6,0
				301	6,0	5,0	2,35	5,0	5,0
				403	5,0	6,0	2,55	7,0	6,0
				Mean =	4,8	5,8	2,50	6,3	5,8

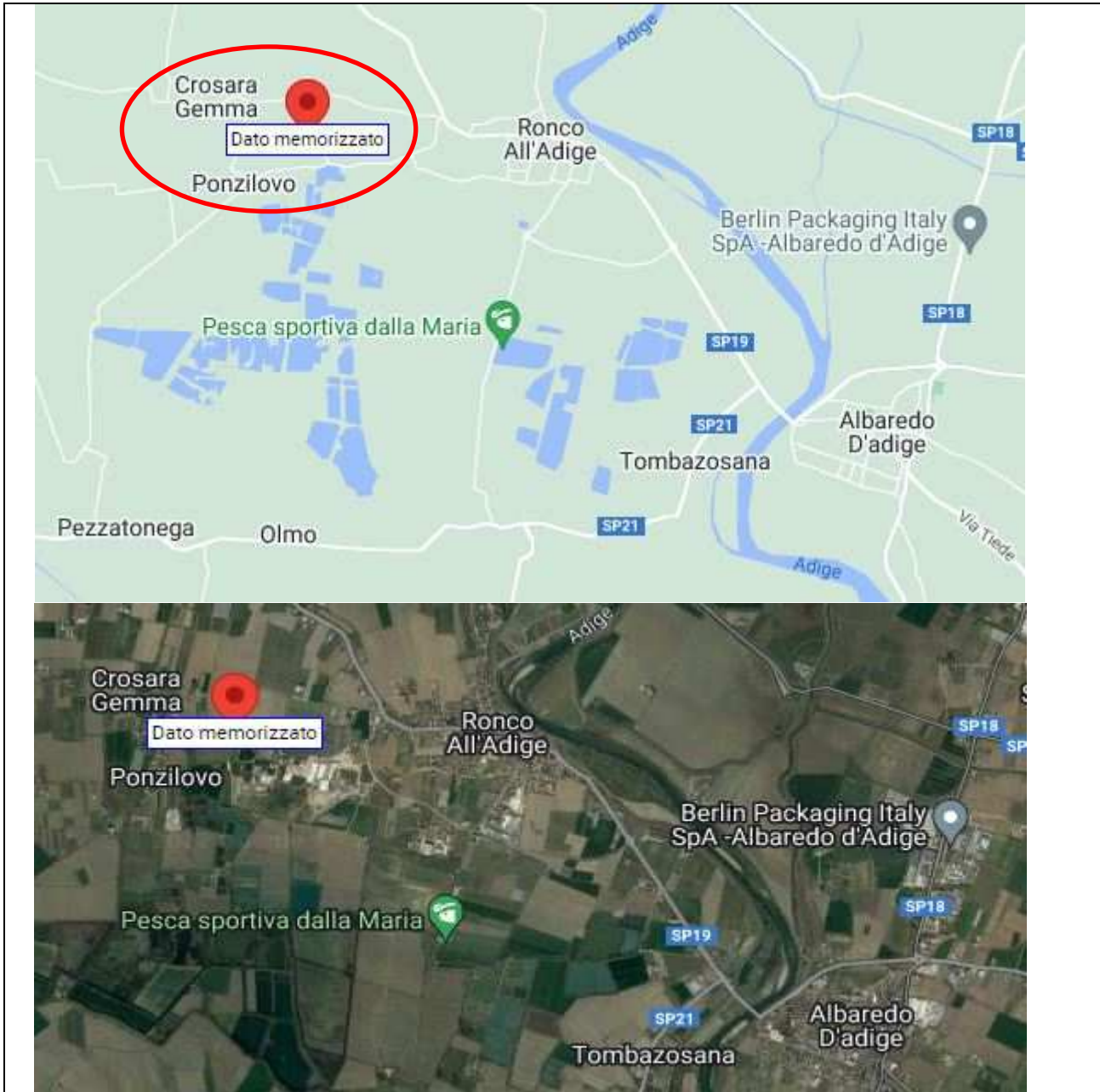


Crop Type, Code								
BBCH Scale								
Crop Scientific Name								
Crop Name								
Crop Variety					wine merlot	wine merlot	wine merlot	wine merlot
Description					lingering	aftertaste	aftertaste	General score
Rating Date					28/Sep/2022	28/Sep/2022	28/Sep/2022	28/Sep/2022
Number of Subsamples					1	1	1	1
Days After First/Last Applic.					140; 63	140; 63	140; 63	140; 63
ARM Action Codes					s05		TL[25] s05	s05
Number of Decimals							2	
Trt	Treatment	Rate	Appl	Plot	24	25	26	27
No.	Name	Rate	Unit	Code				
1	UNTREATED			102	7,0	3,0	0,60	74,0
				201	6,0	3,0	0,60	65,0
				304	7,0	3,0	0,60	72,0
				405	5,0	4,0	0,70	69,0
				Mean =	6,3	3,3	0,63	70,0
2	CUPROFIX ULTRA DISPERS	120g/100 l	ABCDEFGHIKLM	105	.	.	.	.
				203	.	.	.	.
				305	.	.	.	.
				402	.	.	.	.
				Mean =	.	.	.	.
3	GROWMAS	5l/ha	ABCDEFGHIKLM	104	6,0	5,0	0,78	84,0
				205	6,0	5,0	0,78	80,0
				302	7,0	5,0	0,78	80,0
				401	7,0	5,0	0,78	80,0
				Mean =	6,5	5,0	0,78	81,0
4	GROWMAS	3l/ha	ABCDEFGHIKLM	103	.	.	.	.
				204	.	.	.	.
				303	.	.	.	.
				404	.	.	.	.
				Mean =	.	.	.	.
5	CUPROFIX ULTRA DISPERS	120g/100 l	ABCD	101	6,0	4,0	0,70	68,0
	GROWMAS	3l/ha	EFHJLM	202	6,0	5,0	0,78	76,0
				301	5,0	4,0	0,70	72,0
				403	6,0	4,0	0,70	74,0
				Mean =	5,8	4,3	0,72	72,5

Crop Type, Code
 C = EPPO species (Bayer) codes
 VITVI, BGRA, Vitis vinifera, European Grape = US
ARM Action Codes
 s05 = Perform 5% Student-Newman-Keuls mean separation on Standardized Summary |NA
 TS[20] = SQR([20] + .5)
 TL[25] = LOG([25]+ 1)

Road Map Extract

with indication of the trial site



Note / Notes

The red circle indicates the trial site

Trial Map

Trial Map Treatment Description



Moisture and Weather Conditions

Overall Moisture Conditions: DRY dry
 Closest Weather Station: RONCO

Distance: 40 m

No.	Date	Precipitation	Unit	Type	Min Temp	Max Temp	Avg Temp	Temp Unit	Min % Relative Humidity	Max % Relative Humidity	Avg % Relative Humidity
1.	1/Apr/2022	2,6	mm	RAIN	6,21	15,37	11,14	C	71,3	100	97,5
2.	2/Apr/2022	1	mm	RAIN	4,17	12,33	8,14	C	45,5	100	84,1
3.	3/Apr/2022	0,2	mm	RAIN	1,96	13,37	7,27	C	41,9	100	84,8
4.	4/Apr/2022	0	mm	NONE	3,5	14,92	9	C	38,7	100	75,8
5.	5/Apr/2022	0	mm	NONE	-1,17	17,82	8,83	C	35,8	100	76,3
6.	6/Apr/2022	0	mm	NONE	5,34	18	11,59	C	41	100	76,2
7.	7/Apr/2022	0	mm	NONE	5,31	20,91	14	C	39,2	100	73,4
8.	8/Apr/2022	0	mm	NONE	4,48	23,09	14,1	C	42,1	99,9	75,3
9.	9/Apr/2022	0	mm	NONE	5,13	22,93	12,63	C	31,1	100	78,7
10.	10/Apr/2022	0	mm	NONE	2,57	17,45	9,4	C	19,7	100	63,9
11.	11/Apr/2022	0	mm	NONE	4,31	19,97	11,76	C	22,8	83,9	50,8
12.	12/Apr/2022	0	mm	NONE	2,62	20,33	12,61	C	30,7	100	67
13.	13/Apr/2022	0	mm	NONE	5,7	21,75	13,65	C	32	100	67,8
14.	14/Apr/2022	0	mm	NONE	2,19	25,13	14,18	C	25,6	100	65,3
15.	15/Apr/2022	0	mm	NONE	2,47	24,79	14,78	C	22,6	100	60,7
16.	16/Apr/2022	0,4	mm	RAIN	4,83	24,18	14,87	C	32,7	100	64,3
17.	17/Apr/2022	0	mm	NONE	3,76	18,03	12,16	C	22,3	100	49
18.	18/Apr/2022	0	mm	NONE	0,38	18,7	10,59	C	26,3	100	56
19.	19/Apr/2022	0	mm	NONE	1,28	21,08	11,21	C	21,6	100	53,7
20.	20/Apr/2022	0	mm	NONE	7,53	18,13	13,1	C	32,5	100	59,7
21.	21/Apr/2022	0,6	mm	RAIN	3,65	16,72	11,46	C	43,9	100	64,1
22.	22/Apr/2022	12,6	mm	RAIN	9,19	14,47	11,82	C	86,5	99,9	99,7
23.	23/Apr/2022	2,8	mm	RAIN	9,71	20,31	14,17	C	60,9	100	92,8
24.	24/Apr/2022	5,2	mm	RAIN	7,75	17,48	12	C	55,4	100	90,6
25.	25/Apr/2022	0,2	mm	RAIN	4,65	19,56	12,86	C	58,1	100	88,8
26.	26/Apr/2022	7,4	mm	RAIN	11,5	20,92	14,16	C	56,6	100	96,5
27.	27/Apr/2022	0	mm	NONE	7,25	22,38	15,24	C	40,9	100	76,5
28.	28/Apr/2022	0	mm	NONE	7,45	22,36	15,67	C	31,8	100	71,4
29.	29/Apr/2022	0	mm	NONE	6,33	23,46	15,69	C	25,2	100	60,1
30.	30/Apr/2022	0	mm	NONE	5,19	24,24	15,17	C	25,9	100	62,7
31.	1/May/2022	2,2	mm	RAIN	9,24	24,26	15,44	C	34,1	100	81,9
32.	2/May/2022	0	mm	NONE	8,79	23,38	15,56	C	35,8	100	74,6
33.	3/May/2022	0	mm	NONE	8,39	25,39	17,56	C	30	99,9	64,8
34.	4/May/2022	0	mm	NONE	7,4	25,92	16,67	C	29,7	100	72,1
35.	5/May/2022	11,4	mm	RAIN	10,78	19,63	15,53	C	64,7	100	90,6
36.	6/May/2022	22,2	mm	RAIN	12,46	15,86	13,76	C	99,8	99,8	99,8
37.	7/May/2022	2,8	mm	RAIN	12,11	19,65	14,82	C	73,1	100	96,9
38.	8/May/2022	0,2	mm	RAIN	11,8	22,57	16,88	C	48,6	100	82,2
39.	9/May/2022	0	mm	NONE	9,67	26,48	17,54	C	36,6	100	78
40.	10/May/2022	0	mm	NONE	7,95	27,74	18,5	C	30	100	70,4
41.	11/May/2022	0,8	mm	RAIN	9,61	29,53	20,53	C	34,8	100	69,7
42.	12/May/2022	0	mm	NONE	11,58	29,97	21,44	C	32,2	100	69,1
43.	13/May/2022	0	mm	NONE	11,82	29,87	21,22	C	39,8	100	73,9

44.	14/May/2022	0	mm	NONE	14,63	30,01	22,26	C	40,2	100	77,5
45.	15/May/2022	0,2	mm	RAIN	13,63	31,35	22,81	C	40,3	100	72,8
46.	16/May/2022	0	mm	NONE	15,08	31,82	23,49	C	34,2	99,9	70,7
47.	17/May/2022	0	mm	NONE	12,88	31,69	23	C	30,2	100	70,9
48.	18/May/2022	0	mm	NONE	18,28	28,85	23,11	C	42,4	99,9	71,8
49.	19/May/2022	0,2	mm	RAIN	13,03	29,09	21,21	C	33	100	67,9
50.	20/May/2022	0	mm	NONE	10,37	30,83	21,49	C	32,9	100	66,3
51.	21/May/2022	0	mm	NONE	13,53	31,87	23,36	C	39,8	100	68,6
52.	22/May/2022	0	mm	NONE	14,71	32	23,79	C	41,5	100	76,3
53.	23/May/2022	0	mm	NONE	19,76	30,25	25,06	C	52,5	100	81,2
54.	24/May/2022	0	mm	NONE	18,66	31,22	24,11	C	39,6	100	76,8
55.	25/May/2022	0	mm	NONE	15,61	30,94	22,77	C	39,3	100	74,4
56.	26/May/2022	0	mm	NONE	15,35	29,02	22,47	C	55	100	86,5
57.	27/May/2022	0	mm	NONE	16,28	31,53	24,05	C	41,9	100	77
58.	28/May/2022	0,6	mm	RAIN	14,88	27,4	20,94	C	48,8	99,9	82,3
59.	29/May/2022	4,4	mm	RAIN	12,44	18,44	15,5	C	57,5	100	80,3
60.	30/May/2022	0,2	mm	RAIN	12,45	23,48	17,32	C	36,8	100	75,1
61.	31/May/2022	0	mm	NONE	14,79	27,84	20,94	C	41,6	100	77,8
62.	1/Jun/2022	0	mm	NONE	13,15	29,76	19,15	C	40,3	100	77,2
63.	1/Jun/2022	0	mm	NONE	13,15	30,09	22,09	C	40,6	100	77,7
64.	2/Jun/2022	0	mm	NONE	16,01	32,18	23,94	C	50,1	100	88,4
65.	3/Jun/2022	1,6	mm	RAIN	18,88	29,26	23,12	C	36	100	76,7
66.	4/Jun/2022	0,2	mm	RAIN	15,05	33,18	24,08	C	39,7	100	74,9
67.	5/Jun/2022	0	mm	NONE	17,78	33,25	25,38	C	30,1	100	68,2
68.	6/Jun/2022	0	mm	NONE	14,08	32,03	23,79	C	39,2	100	88,4
69.	7/Jun/2022	10	mm	RAIN	15,43	29,59	20,85	C	36	99,9	74,7
70.	8/Jun/2022	0	mm	NONE	12,15	29,7	20,6	C	37,4	99,9	71,2
71.	9/Jun/2022	1	mm	RAIN	14,01	25,67	20,61	C	23,3	100	63
72.	10/Jun/2022	0	mm	NONE	12,79	31,29	22,87	C	26,6	100	66,6
73.	11/Jun/2022	0	mm	NONE	12,31	32,57	23,19	C	28,4	100	66,3
74.	12/Jun/2022	0	mm	NONE	13,5	33,58	24,39	C	27,3	100	69,3
75.	13/Jun/2022	0	mm	NONE	14,03	35,09	24,38	C	36,1	100	62,9
76.	14/Jun/2022	0	mm	NONE	18,45	31,15	25,11	C	32,1	100	66,8
77.	15/Jun/2022	0	mm	NONE	15,46	34,03	24,69	C	32,4	100	67,7
78.	16/Jun/2022	0	mm	NONE	15,95	34,91	25,69	C	27,7	100	59
79.	17/Jun/2022	0	mm	NONE	19,43	35,61	27,92	C	29,7	93,3	52,9
80.	18/Jun/2022	0	mm	NONE	19,34	33,79	26,58	C	22,2	100	60,6
81.	19/Jun/2022	0	mm	NONE	14,23	35,31	25,68	C	29,1	100	63,9
82.	20/Jun/2022	0	mm	NONE	16,07	35,9	26,75	C	29	100	66,7
83.	21/Jun/2022	0	mm	NONE	17,44	35,37	27,07	C	39	100	80,7
84.	22/Jun/2022	0,2	mm	RAIN	19,6	32,06	25,35	C	36,4	100	74,2
85.	23/Jun/2022	0	mm	NONE	18,69	33,74	25,86	C	27,8	100	67,2
86.	24/Jun/2022	0	mm	NONE	17,55	33,85	25,09	C	30,5	100	67,7
87.	25/Jun/2022	0	mm	NONE	16,63	33,25	25,23	C	26,6	100	65,8
88.	26/Jun/2022	0	mm	NONE	16,67	36,42	27,19	C	26,1	79,4	51
89.	27/Jun/2022	0	mm	NONE	21,34	35,64	28,79	C	35,2	100	67,3
90.	28/Jun/2022	3,4	mm	RAIN	17,23	32,63	26,15	C	39,2	100	80,5
91.	29/Jun/2022	0,2	mm	RAIN	20,2	33,11	25,22	C	35,7	100	70,2
92.	30/Jun/2022	0	mm	NONE	17,88	35,31	25,34	C	31,3	100	71,7
93.	1/Jul/2022	0	mm	NONE	22,33	36,22	27,9	C	23,8	100	66,9
94.	2/Jul/2022	0	mm	NONE	16,81	36,13	27,01	C	27,7	100	63,2
95.	3/Jul/2022	0	mm	NONE	17,64	38,48	28,38	C	24,8	99,9	64,6
96.	4/Jul/2022	1,6	mm	RAIN	19,16	36,9	27,79	C	29,3	99,9	64,6
97.	5/Jul/2022	0	mm	NONE	16,34	35,49	26,54	C	28,6	100	62,7
98.	6/Jul/2022	1,6	mm	RAIN	19,8	34,66	27	C	30,1	99,9	68,5
99.	7/Jul/2022	26,2	mm	RAIN	15,92	34	24,49	C	32,3	100	66
100.	8/Jul/2022	0	mm	NONE	14,37	32,2	24,21	C	28,3	100	63,1
101.	9/Jul/2022	0	mm	NONE	14,11	31,74	23,26	C	23,1	100	60,1
102.	10/Jul/2022	0	mm	NONE	14,14	33,18	24,46	C	35,4	76,3	56
103.	11/Jul/2022	0	mm	NONE	21,22	32,31	25,68	C	33,3	91,2	57,4
104.	12/Jul/2022	0	mm	NONE	19,95	32,8	26,06	C	28,5	100	61,8
105.	13/Jul/2022	0	mm	NONE	19,25	33,9	26,34	C	20,4	100	69,8
106.	14/Jul/2022	0	mm	NONE	15,48	35,52	24,94	C	26,4	100	61,3
107.	15/Jul/2022	0	mm	NONE	16,62	37,46	27,36	C	28,4	71,2	49,3
108.	16/Jul/2022	0	mm	NONE	23,41	35,52	29,2	C	28,6	100	51,5
109.	17/Jul/2022	0	mm	NONE	21,26	34,72	28,47	C	27,7	100	50,6
110.	18/Jul/2022	0	mm	NONE	20,61	34,23	27,63	C	22,1	100	54,7
111.	19/Jul/2022	0	mm	NONE	17,85	36,24	27,72	C	20,6	100	57,3
112.	20/Jul/2022	0	mm	NONE	16,3	37,67	27,73	C	18,9	100	55,8
113.	21/Jul/2022	0	mm	NONE	17,75	38,01	28,46	C	20,8	100	54,6

114.	22/Jul/2022	0	mm	NONE	18,13	39,19	29,17	C	19,9	100	60,5
115.	23/Jul/2022	0	mm	NONE	18,28	38,92	28,84	C	25,3	100	54,6
116.	24/Jul/2022	0	mm	NONE	20,41	37,52	29,81	C	23,3	100	61,9
117.	25/Jul/2022	0	mm	NONE	19,01	38,85	29,16	C	31,4	100	56,6
118.	26/Jul/2022	0	mm	NONE	20,08	36,31	29,33	C	37,2	100	71
119.	27/Jul/2022	17,2	mm	RAIN	19,99	32,67	26,21	C	34	100	68,5
120.	28/Jul/2022	0	mm	NONE	18,95	32,96	26,4	C	30,5	100	75,4
121.	29/Jul/2022	4,4	mm	RAIN	17,96	35,83	25,43	C	31,9	100	72,4
122.	30/Jul/2022	0,6	mm	RAIN	18,38	33,43	25,54	C	24,6	100	66,4
123.	31/Jul/2022	0	mm	NONE	15,58	34,65	25,73	C	26,8	100	56
124.	1/Aug/2022	0	mm	NONE	18,03	36,72	28,23	C	28,1	100	61,1
125.	2/Aug/2022	4,6	mm	RAIN	19,77	33,52	26,27	C	25,8	100	65
126.	3/Aug/2022	0	mm	NONE	17,51	36,53	26,76	C	20,4	100	58
127.	4/Aug/2022	0	mm	NONE	18,27	38,13	28,46	C	22,9	100	64,9
128.	5/Aug/2022	0,2	mm	RAIN	17,94	38,2	27,43	C	20,8	100	64,4
129.	6/Aug/2022	2,6	mm	RAIN	19,14	39,08	27,86	C	48,1	100	87,7
130.	7/Aug/2022	6,4	mm	RAIN	19,69	29,5	23,52	C	36,8	99,9	72,7
131.	8/Aug/2022	0	mm	NONE	17,49	33,69	25,58	C	26,7	100	53
132.	9/Aug/2022	0	mm	NONE	19,44	34,27	27,08	C	22,9	99,9	48,4
133.	10/Aug/2022	0	mm	NONE	18,79	33,8	26,23	C	21,4	100	52,2
134.	11/Aug/2022	0	mm	NONE	16,85	33,68	25,81	C	28,8	100	69,4
135.	12/Aug/2022	6,6	mm	RAIN	18,07	31,37	23,09	C	25,1	100	66
136.	13/Aug/2022	0	mm	NONE	12,85	31,74	22,76	C	22,6	100	64,8
137.	14/Aug/2022	0	mm	NONE	13,95	32,99	23,77	C	29,7	100	63,8
138.	15/Aug/2022	1,2	mm	RAIN	17,92	33,3	25,83	C	72,8	100	97,7
139.	16/Aug/2022	0,2	mm	RAIN	17	22,07	19,59	C	99,8	99,9	99,8

Additional Information (Validation List Comments)

DRY, dry = dry

m = meter

mm = millimeter

RAIN, rain = rain

C = Celsius

NONE, none = none

Testing facility authorization by Italian Ministry for Agriculture and Forestry (Mi.P.A.A.F.)


*Ministero delle politiche agricole
alimentari e forestali*

DIPARTIMENTO DELLE POLITICHE EUROPEE E INTERNAZIONALI E DELLO SVILUPPO RURALE
DIREZIONE GENERALE DELLO SVILUPPO RURALE
DISR V

**CERTIFICATO DI CONFORMITA' ALLA BUONA PRATICA PER
L'ESECUZIONE DELLE PROVE DI CAMPO**

(Decreto Legislativo 17 marzo 1995, n. 194)

Ai sensi dell'articolo 4, commi 6, 7 e 8 del Decreto Legislativo 17 marzo 1995, n. 194 e tenuto conto dell'esito favorevole dell'ispezione effettuata in data 17 settembre 2020

SI CERTIFICA

Che il Centro "AGREA S.r.l." con sede legale in Via G. Garibaldi, 5 - int. 16 – 37057 San Giovanni Lupatoto (VR) è riconosciuto idoneo a proseguire nelle prove ufficiali di campo con prodotti fitosanitari volte ad ottenere le seguenti informazioni:

- Efficacia dei prodotti fitosanitari (di cui all'Allegato III, punto 6.2 del decreto legislativo 194/95);
- Dati sulla comparsa o eventuale sviluppo di resistenza (di cui all'Allegato III, punto 6.3 del decreto legislativo 194/95);
- Incidenza sulla resa quantitativa e/o qualitativa (di cui all'Allegato III, punto 6.4 del decreto legislativo 194/95);
- Fitotossicità nei confronti delle piante e prodotti vegetali bersaglio (di cui all'Allegato III, punto 6.5 del decreto legislativo 194/95);
- Osservazioni riguardanti gli effetti collaterali indesiderabili (di cui all'Allegato III, punto 6.6 del decreto legislativo 194/95).
- Prove di campo riguardanti l'efficacia e gli effetti collaterali nei confronti degli organismi utili dei biostimolanti, degli attivatori, nonché i trattamenti in post-raccolta e conservazione;
- Individuazione dei prodotti di degradazione e di reazione dei metaboliti in piante o prodotti trattati (di cui all'allegato II, punto 6.1 del decreto legislativo 194/95);
- Valutazione del comportamento dei residui delle sostanze attive e dei suoi metaboliti a partire dall'applicazione fino al momento della raccolta o della commercializzazione dei prodotti immagazzinati (di cui all'allegato II, punto 6.2 del decreto legislativo 194/95);
- Definizione del bilancio generale dei residui delle sostanze attive (di cui all'allegato II, punto 6.3 del decreto legislativo 194/95);
- Prove relative agli effetti della lavorazione industriale e/o preparazione domestica sulla natura e sull'entità dei residui (Allegato II, punto 6.6 del decreto legislativo 194/95);
- Prove su destino e comportamento ambientale (di cui all'allegato II, punti 7.1 e 7.2 del decreto legislativo 194/95);
- Studi ecotossicologici relativi agli effetti sugli artropodi (di cui all'allegato II, parte A, così come codificato dal D.M. 15 aprile 1996, punto 8.3);
- Studi ecotossicologici (di cui all'allegato II, parte B, punti 8.5-8.10);

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*Ministero delle politiche agricole
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DIPARTIMENTO DELLE POLITICHE EUROPEE E INTERNAZIONALI E DELLO SVILUPPO RURALE
DIREZIONE GENERALE DELLO SVILUPPO RURALE
DISR V

- Determinazione dei residui in o su prodotti trattati, alimenti per l'uomo o per gli animali (di cui all'Allegato III, punto 8.1 del decreto legislativo 194/95);
- Valutazione dei dati sui residui nelle colture successive o di rotazione (di cui all'Allegato III, punto 8.5 del decreto legislativo 194/95);
- Individuazione dei tempi di carenza per impieghi in pre-raccolta o post-raccolta (di cui all'Allegato III, punto 8.6 del decreto legislativo 194/95);
- Studi ecotossicologici relativamente all'ottenimento dei dati sull'esposizione (di cui all'Allegato III, punto 7.2 del decreto legislativo 194/95);
- Prove relative agli effetti della lavorazione industriale e/o preparazione domestica sulla natura e sull'entità dei residui (di cui all'Allegato III, punto 8.2 del decreto legislativo 194/95);
- Prove su destino e comportamento ambientale (di cui all'Allegato III, punti 9.1, 9.2 e 9.3 del decreto legislativo 194/95);
- Studi ecotossicologici relativi agli effetti su altri organismi non bersaglio (di cui all'Allegato III, punti 10.4, 10.5, 10.6 e 10.7 del decreto legislativo 194/95).

Detto riconoscimento riguarda le prove di campo di efficacia di prodotti fitosanitari nei seguenti settori di attività:

- Aree acquatiche
- Aree non agricole;
- Colture arboree;
- Colture erbacee;
- Colture forestali;
- Colture medicinali ed aromatiche;
- Colture ornamentali;
- Colture orticole;
- Colture tropicali;
- Concia sementi;
- Conservazione post-raccolta;
- Diserbo;
- Entomologia;
- Microbiologia agraria;
- Nematologia;
- Patologia vegetale;
- Zoologia agraria;
- Produzione sementi
- Vertebrati dannosi;
- Fitoregolatori, attivatori e coadiuvanti

MIPAAF - DISR 05 - Prot. Uscita N.0247364 del 28/05/2021



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DIPARTIMENTO DELLE POLITICHE EUROPEE E INTERNAZIONALI E DELLO SVILUPPO RURALE
DIREZIONE GENERALE DELLO SVILUPPO RURALE
DISR V

Il presente certificato ha la validità di mesi 24 dalla data di ispezione

Il Centro “AGREA S.r.l.” qualora intenda confermare o variare gli ambiti operativi di cui al presente decreto, potrà inoltrare apposita istanza, almeno sei mesi prima della data di scadenza, corredata dalla relativa documentazione comprovante il possesso dei requisiti richiesti.

Roma, lì

IL DIRETTORE DEL
SERVIZIO FITOSANITARIO CENTRALE
Bruno Caio Faraglia

Documento informatico sottoscritto
con firma elettronica digitale
ai sensi degli artt. 21 e 24 del D.lgs. n. 82/2005

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