

Gestione innovativa del vigneto nello scenario del *climate change*

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UNIONE EUROPEA



FONDO EUROPEO
AGRICOLA PER LO
SVILUPPO RURALE:
L'EUROPA INVESTE NELLE
ZONE RURALI



MINISTERO DELLE
POLITICHE AGRICOLE,
ALIMENTARI E FORESTALI

REPUBBLICA ITALIANA



REGIONE SICILIANA
ASSESSORATO REGIONALE
DELL'AGRICOLTURA,
DELLO SVILUPPO RURALE
E DELLA PESCA
MEDITERRANEA



Misura 16



G.O. V.E.I.S.Ca



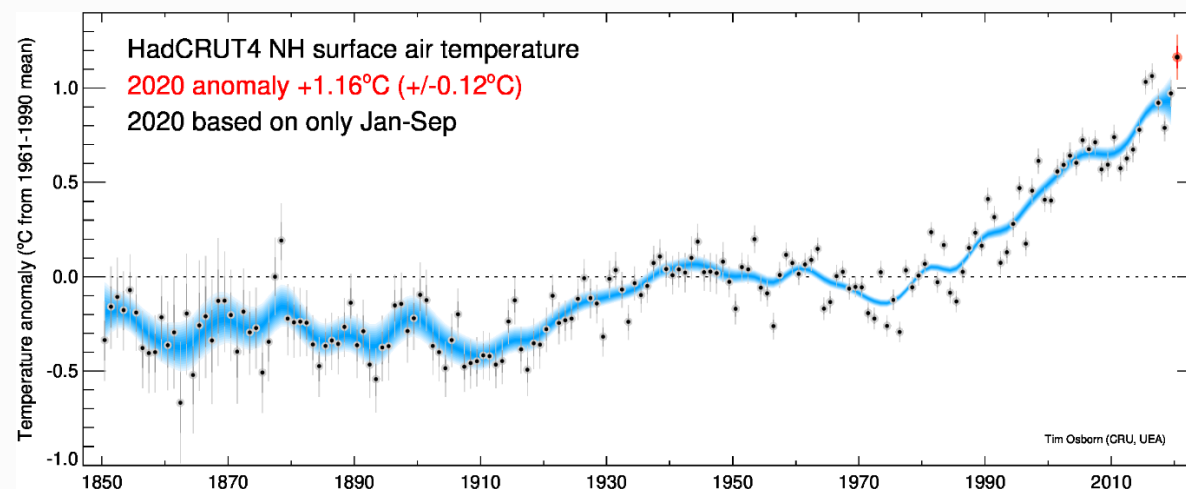
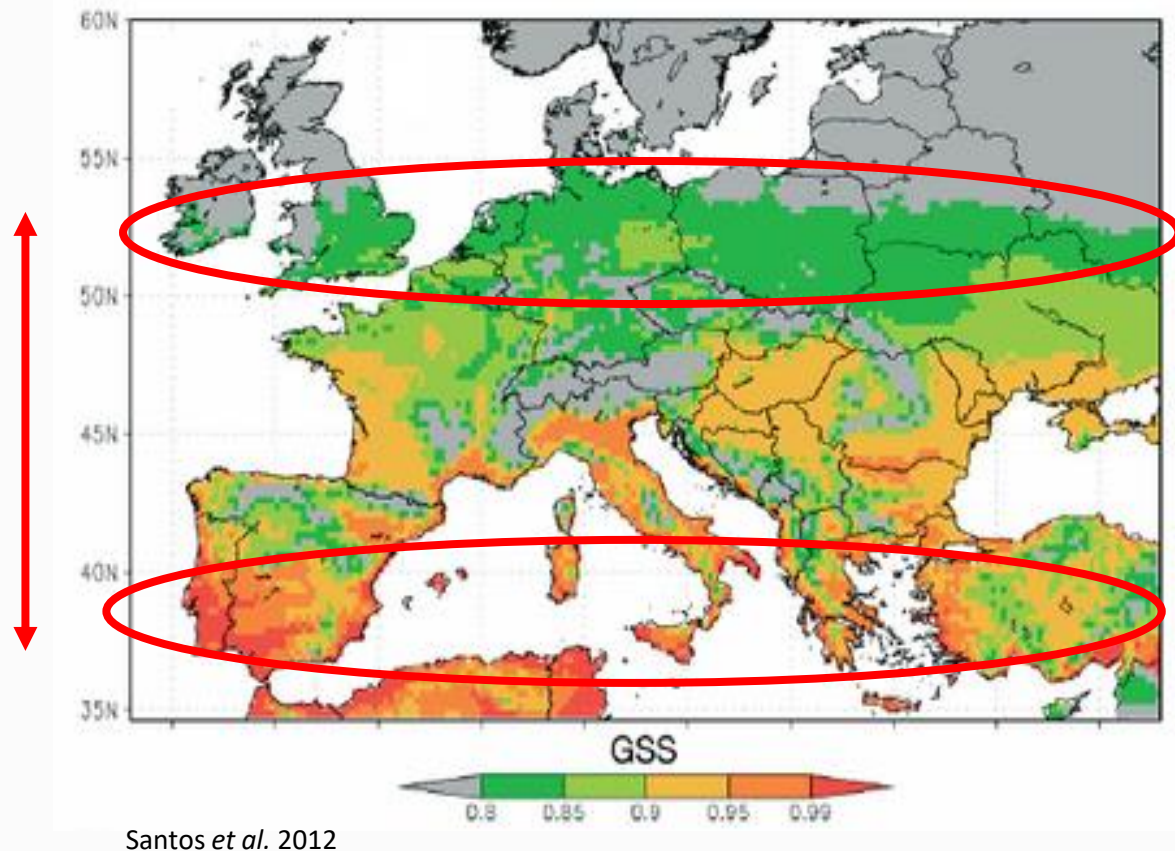
≡ LA STAMPA

L'emergenza siccità minaccia il Barolo, è ora di salvare le viti delle Langhe

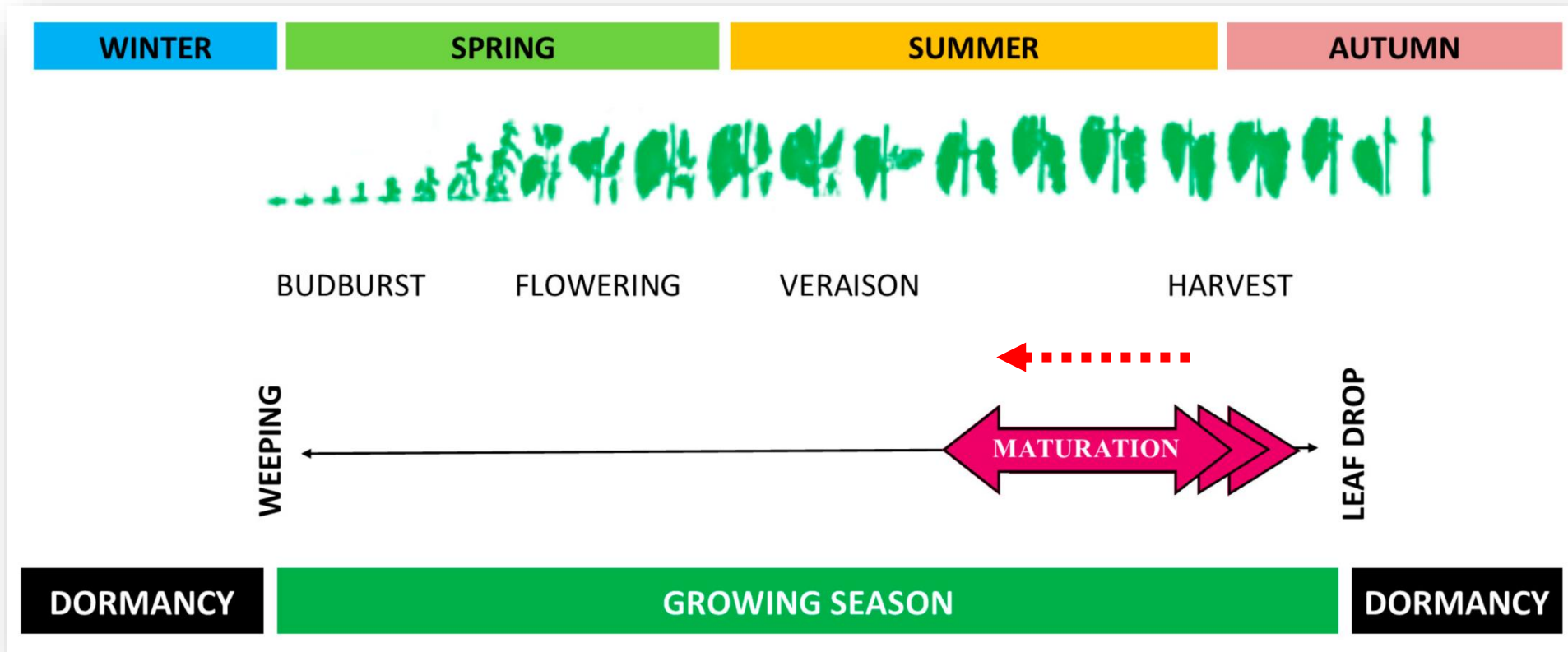
09 Marzo 2023 alle 01:00 | 3 minuti di lettura



Effetti a lungo termine su scala globale

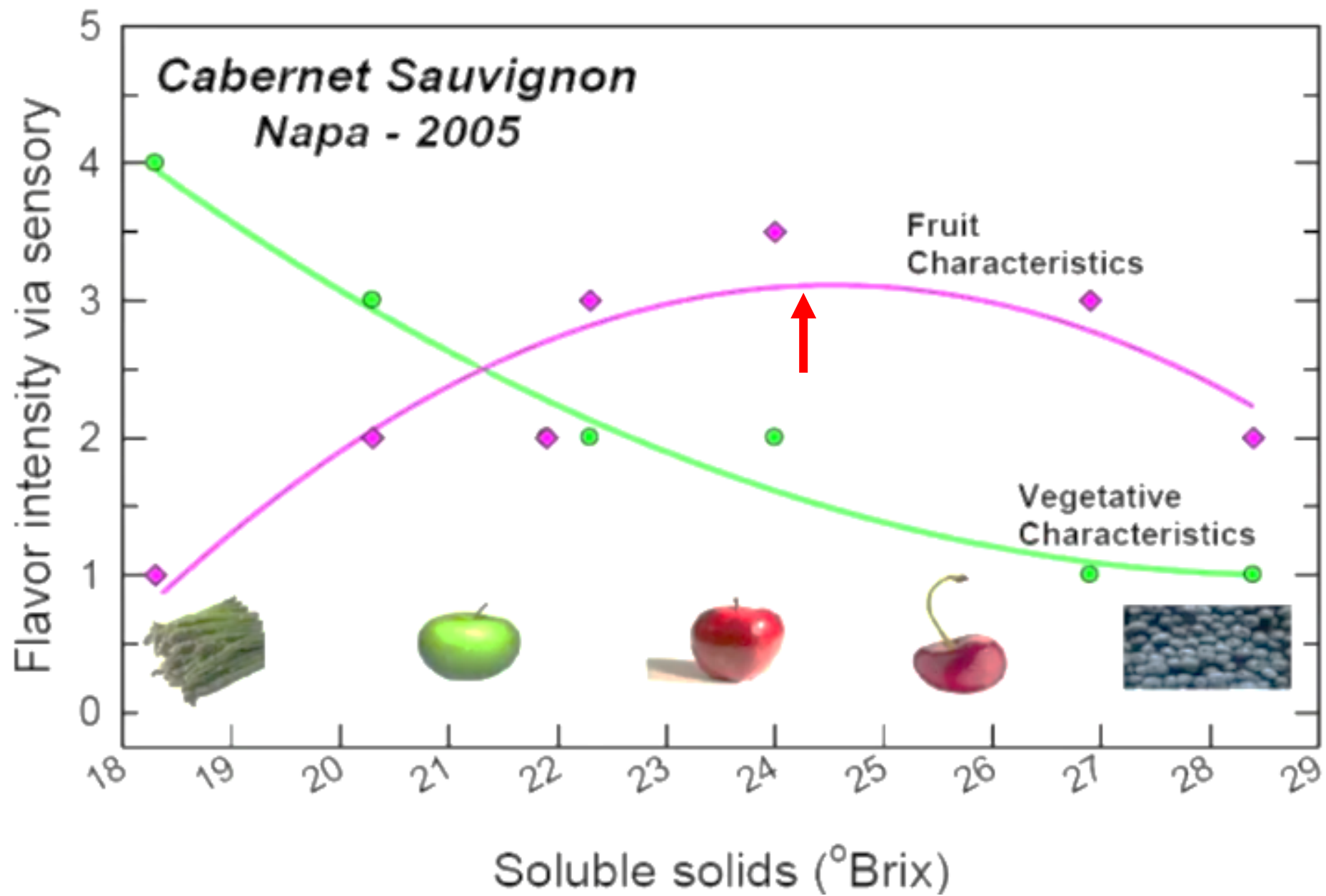


...Effetti a breve termine su scala locale:



- Anticipo degli stadi fenologici;
- Disaccoppiamento di maturità tecnologica e fenolica;
- Riduzione degli standard qualitativi di uva e vino;

- Tassi traspirativi spinti e *stress* idrico;
- Scottature su foglie e frutti;
- Superficie fogliare e rese ridotti;



Tecniche di mitigazione

1. Gestione della chioma



2. Uso di sostanze schermanti
(caolino)



3. Ombreggiamento artificiale dell'intera
pianta o dei grappoli





Valutazione degli effetti della copertura con reti

Acquisizione e analisi dei dati

MICROCLIMA CHIOMA

- Temperatura (°C)
- Umidità relativa (%)

1

DATI VEGETATIVI, STATO IDRICO E NUTRIZIONALE

- Lunghezza asse principale (cm)
- Superficie fogliare germoglio (cm²)
- Stem Water Potential Ψ
- Contenuto fogliare in Clorofilla, Flavonoidi e Antociani

2

DATI QUANTI-QUALITATIVI

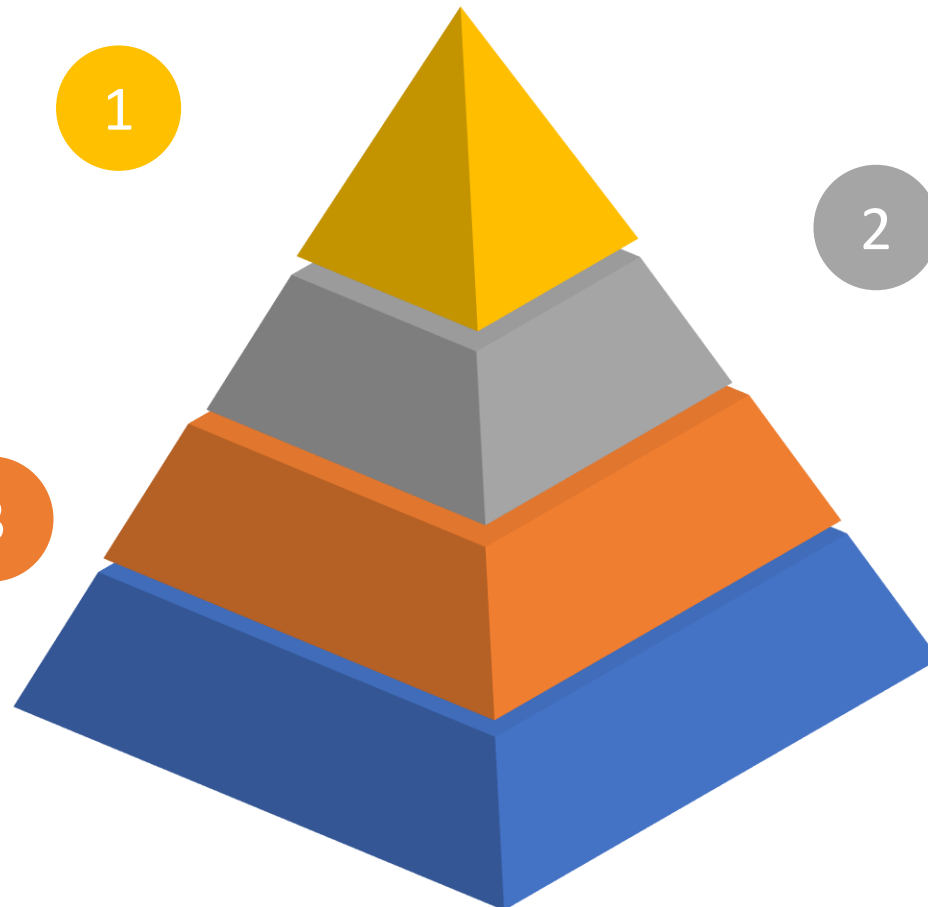
- Maturazione tecnologica
- Maturazione fenolica
- Produzione/pianta (kg)

3

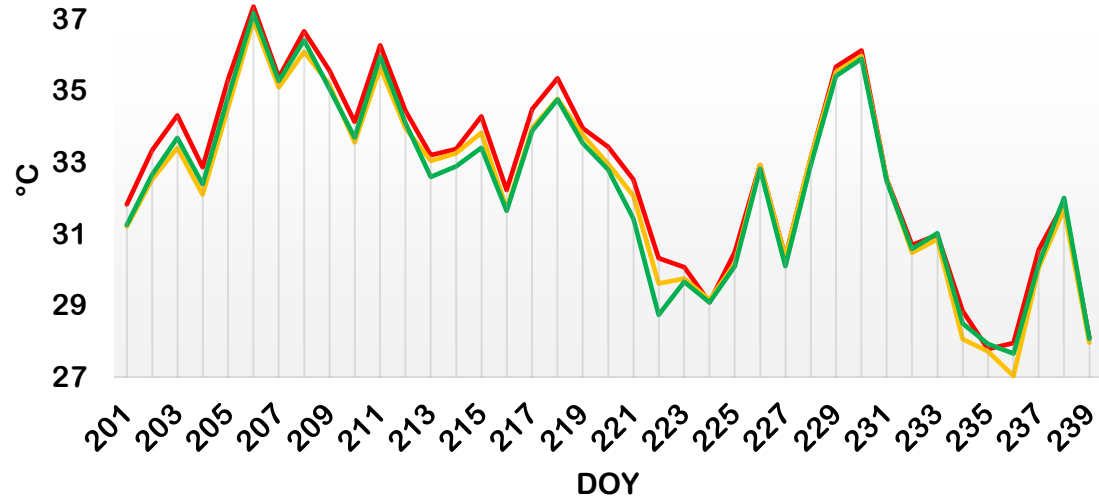
ANALISI STATISTICA

Analisi della varianza (ANOVA)

4

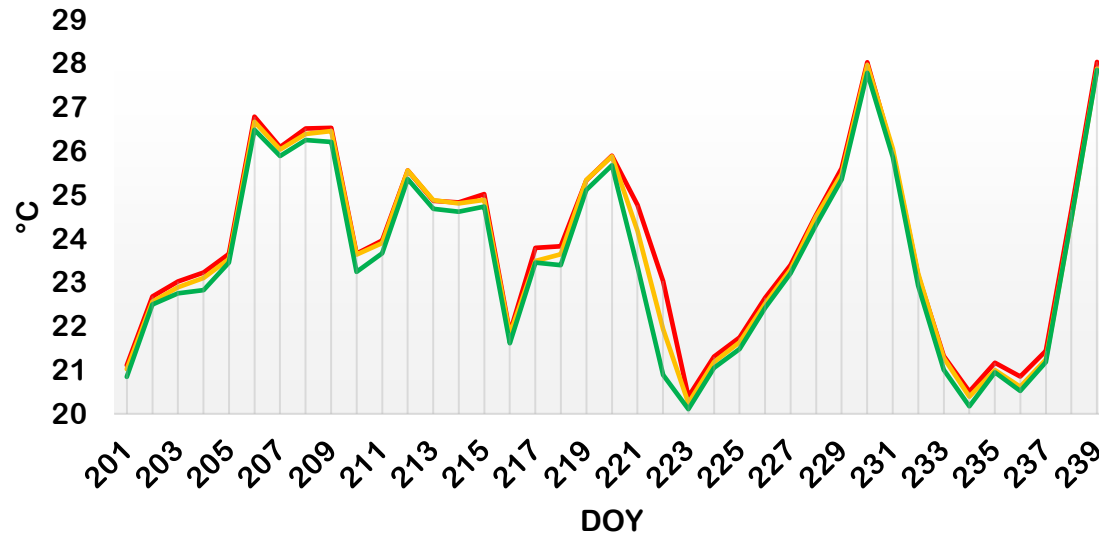


Temperatura media diurna



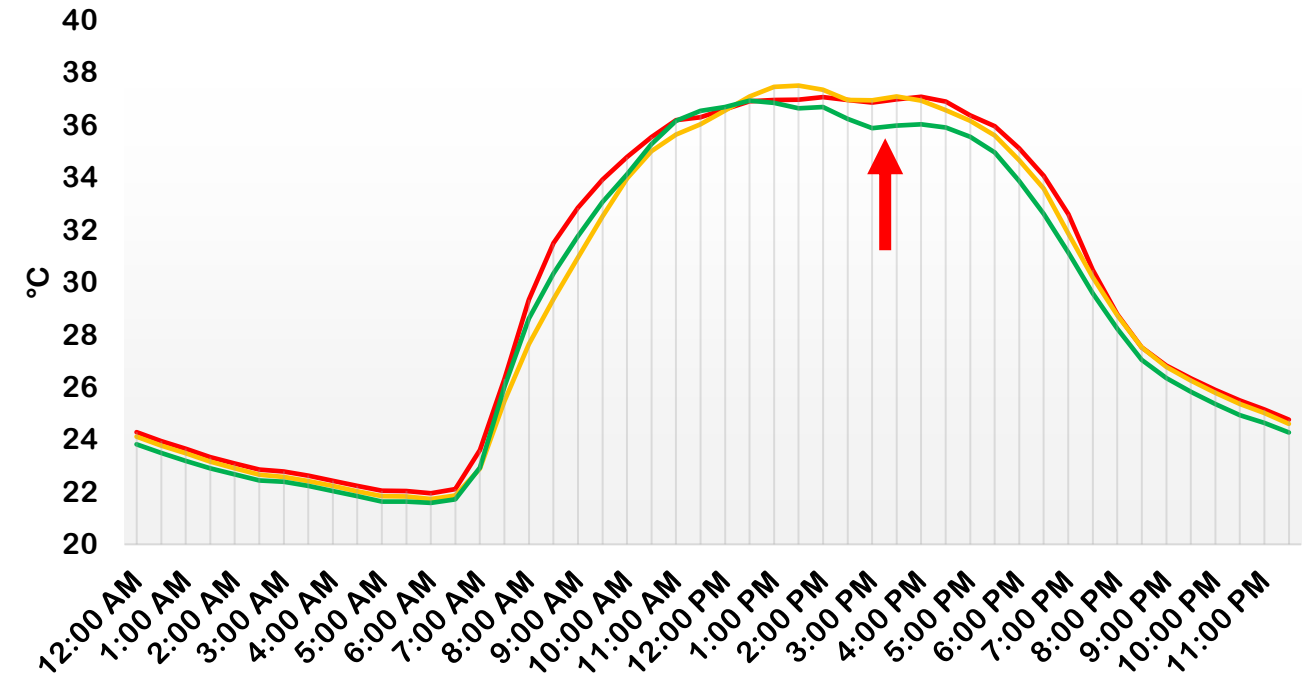
Controllo R26 R40

Temperatura media notturna



Controllo R26 R40

Temperatura media oraria

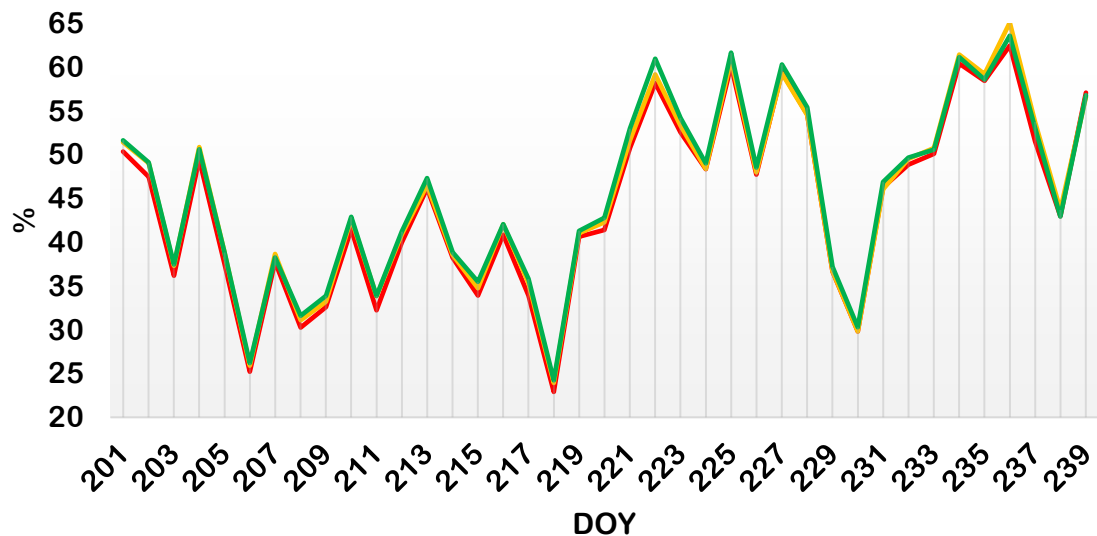


Controllo R26 R40

Tesi	Periodo	Temperatura (°C)	Grouping
Controllo	Diurno	33,3	A ←
R26	Diurno	32,5	B
R40	Diurno	32,4	B
Controllo	Notturno	24,0	C
R26	Notturno	24,0	C
R40	Notturno	23,8	C

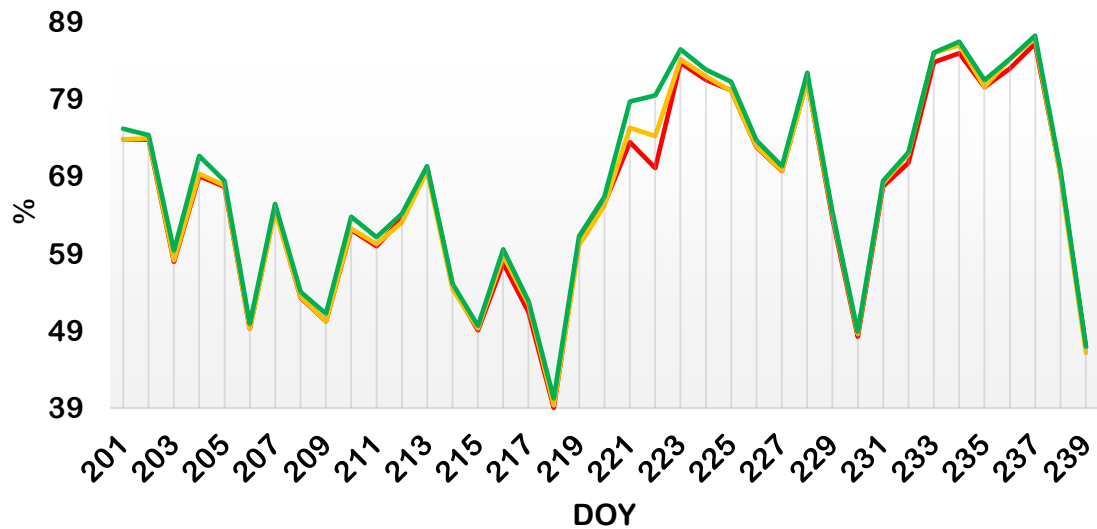
Le medie che non condividono una lettera sono significativamente diverse

Umidità relativa media diurna



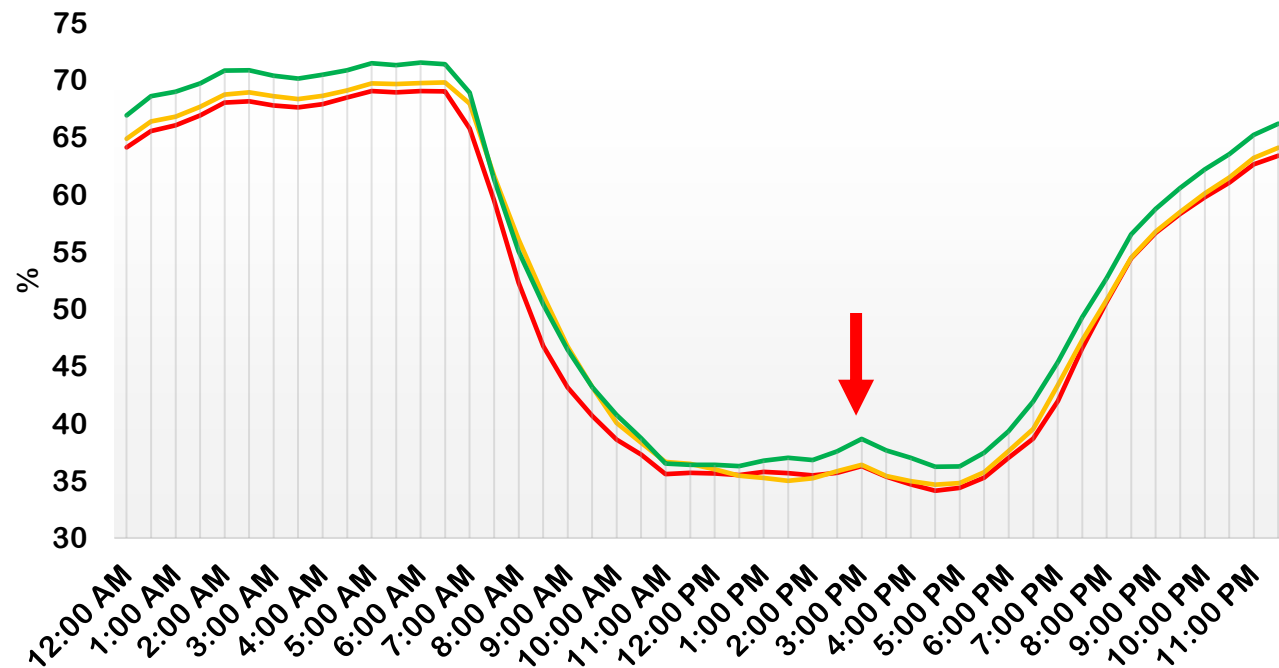
Controllo R26 R40

Umidità relativa media notturna



Controllo R26 R40

Umidità relativa media oraria

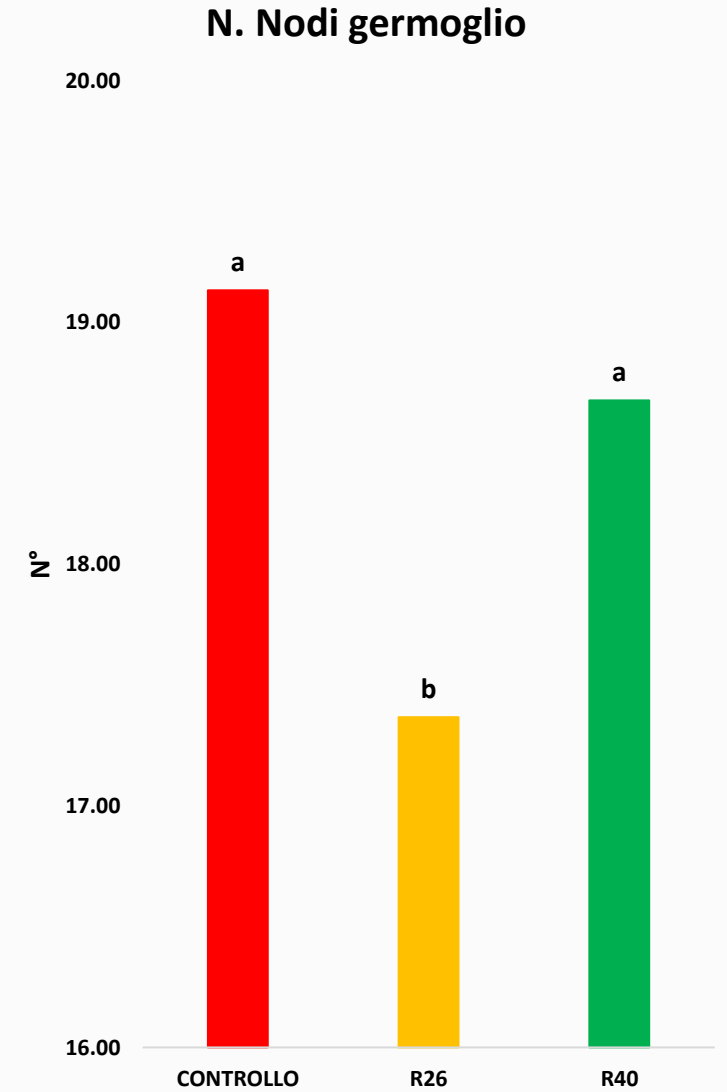
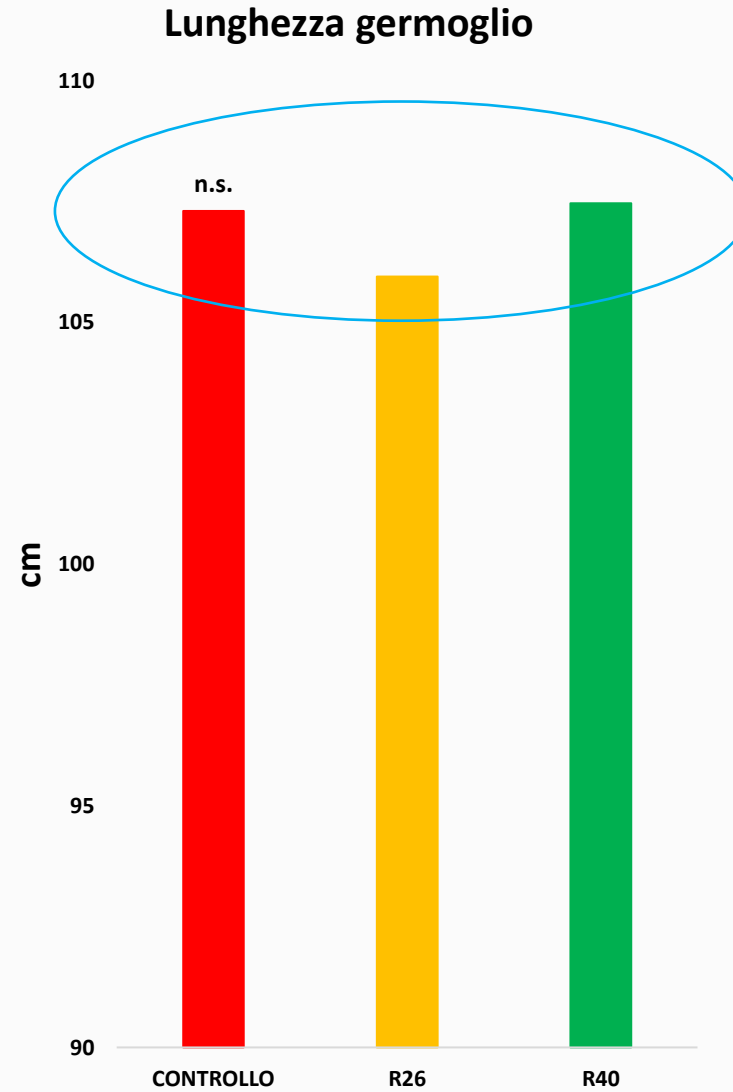


Controllo R26 R40

Tesi	Periodo	Umidità relativa (%)	Grouping
R40	Notturno	67,1	A
R26	Notturno	65,1	B
Controllo	Notturno	64,5	B
R40	Diurno	44,7	C
R26	Diurno	43,5	D
Controllo	Diurno	42,5	E

Means that do not share a letter are significantly different

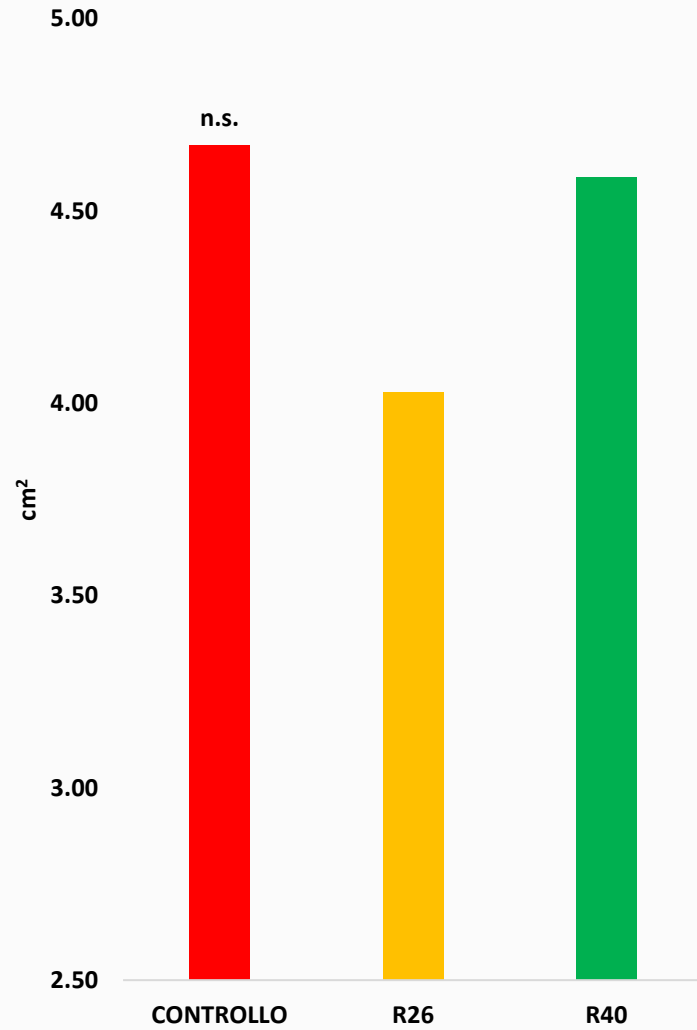
Dati vegetativi



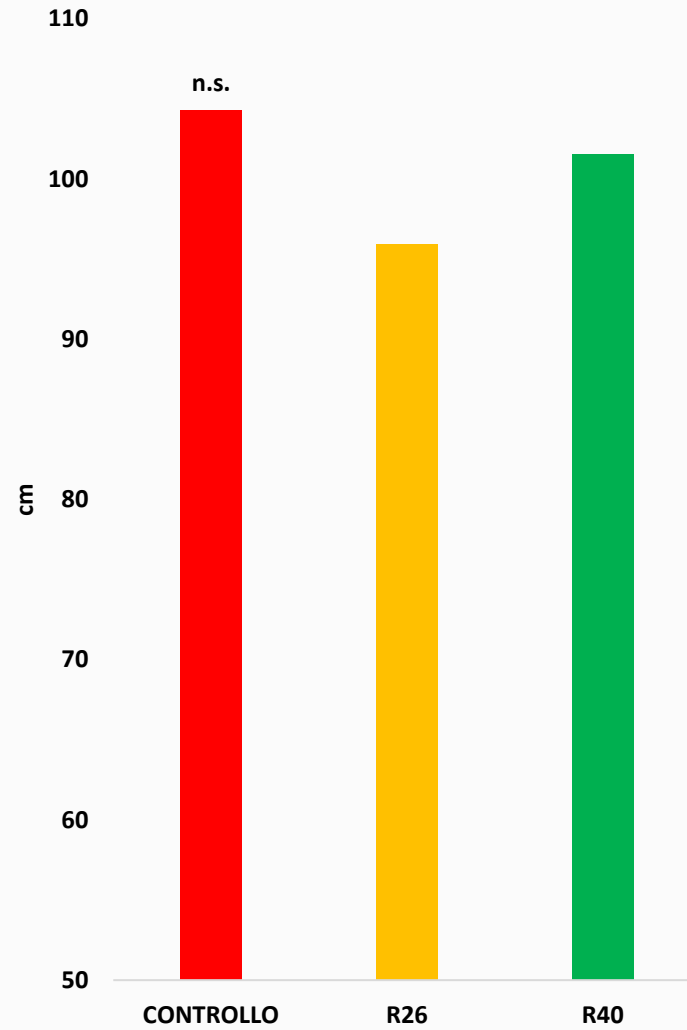
Means that do not share a letter are significantly different

GRILLO

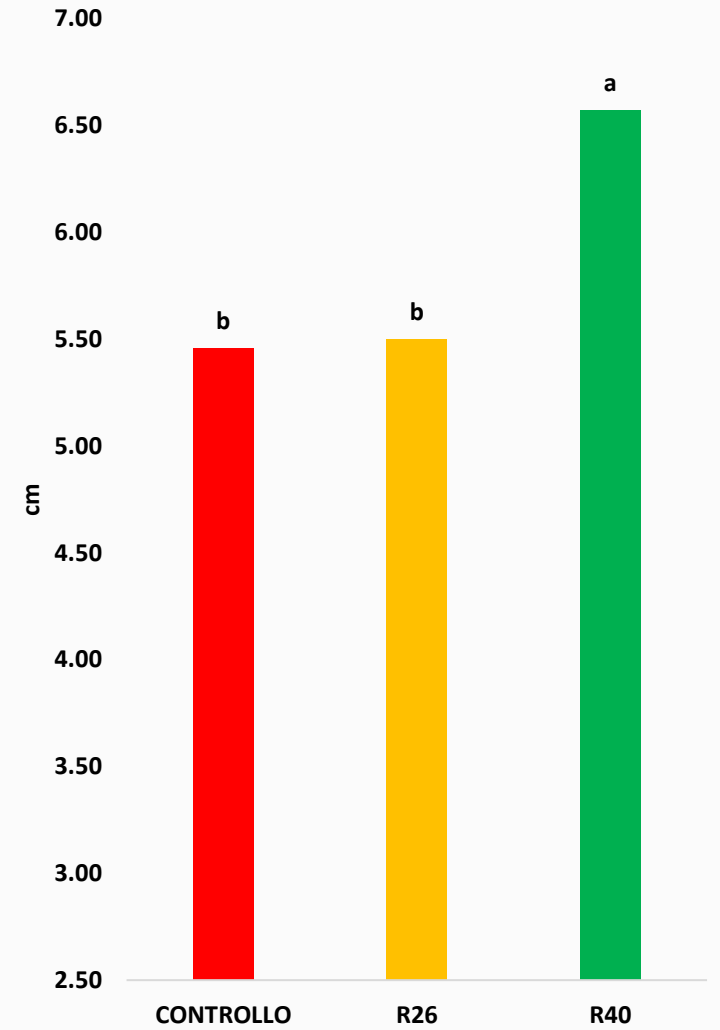
Superficie fogliare/pianta



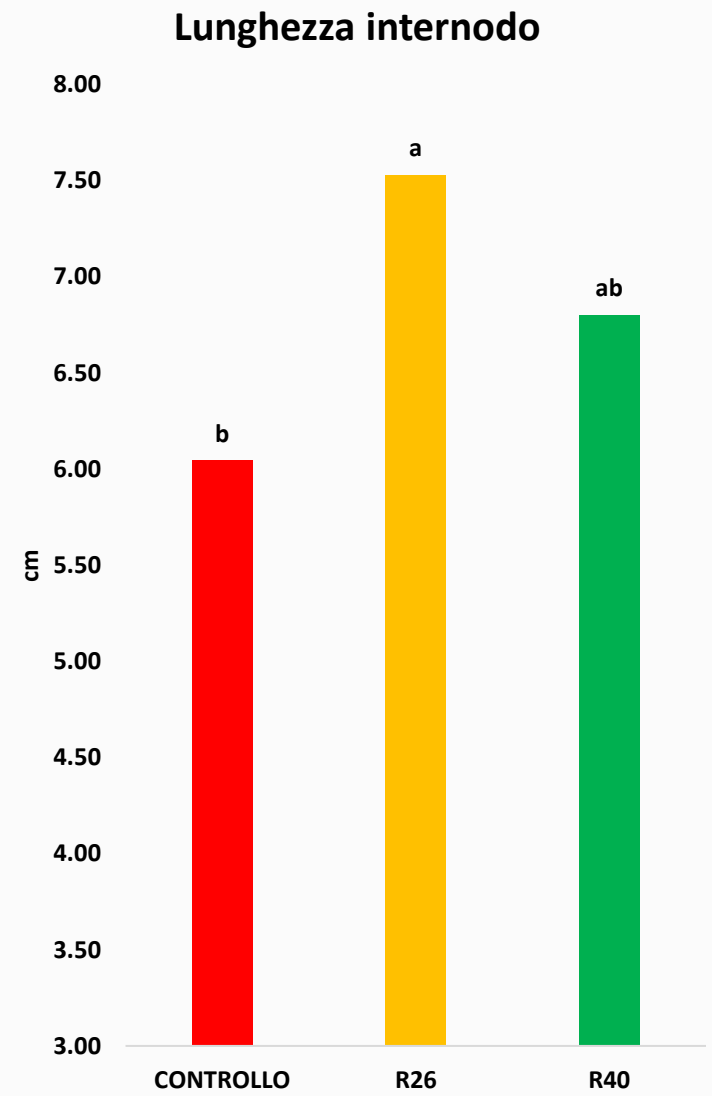
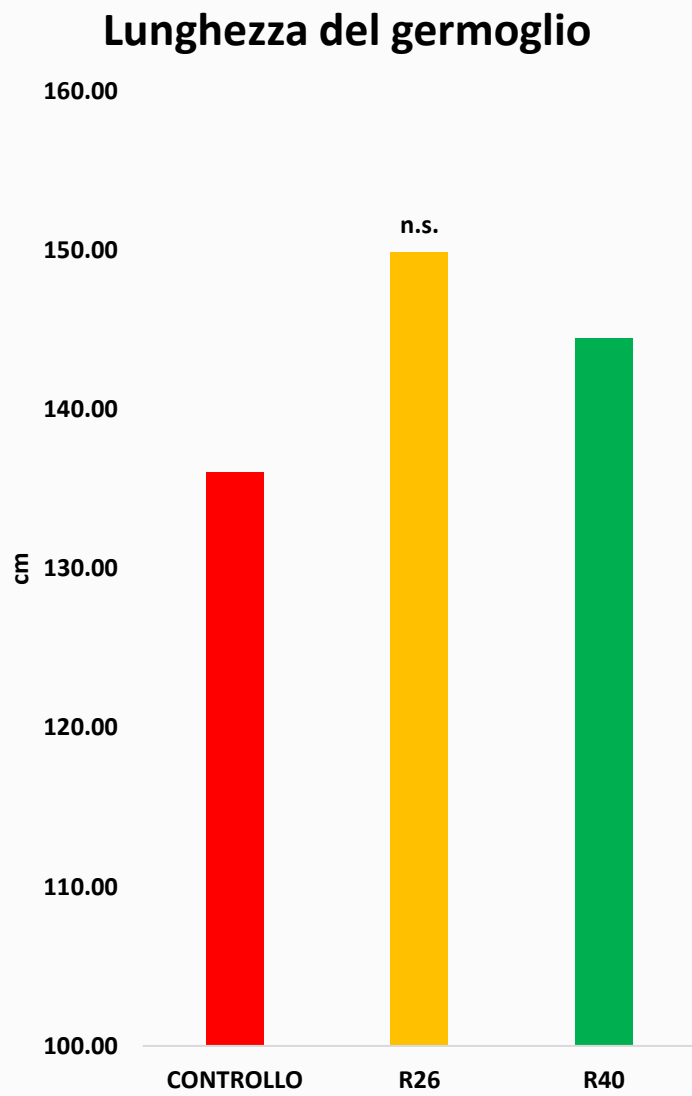
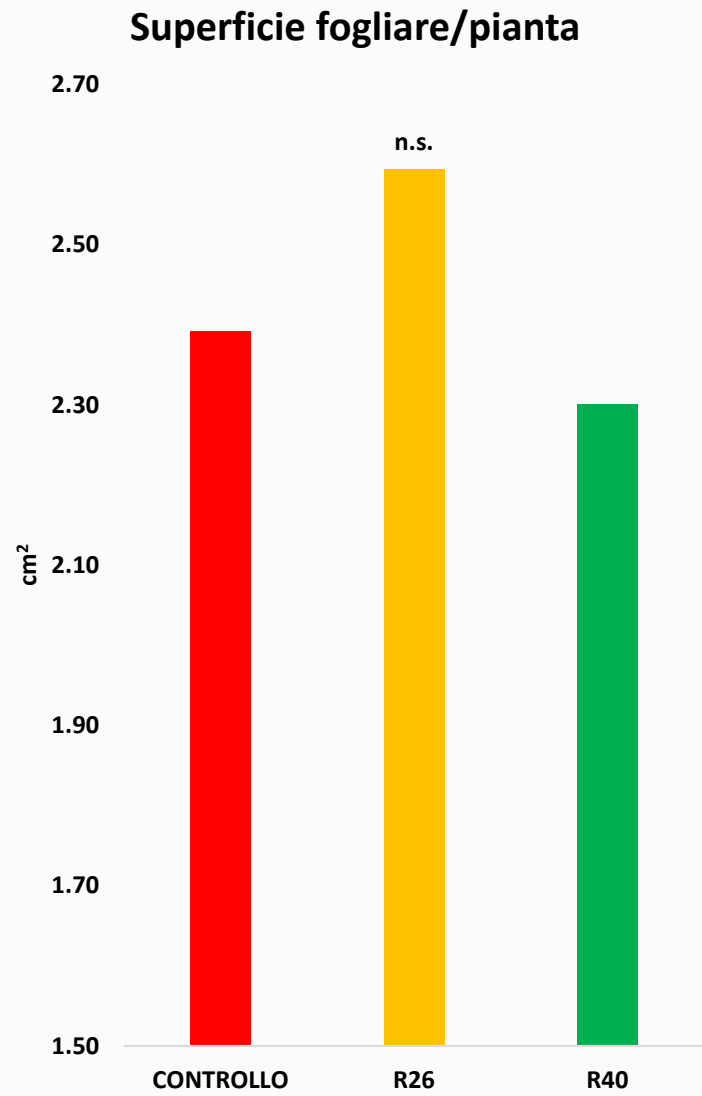
Lunghezza del germoglio



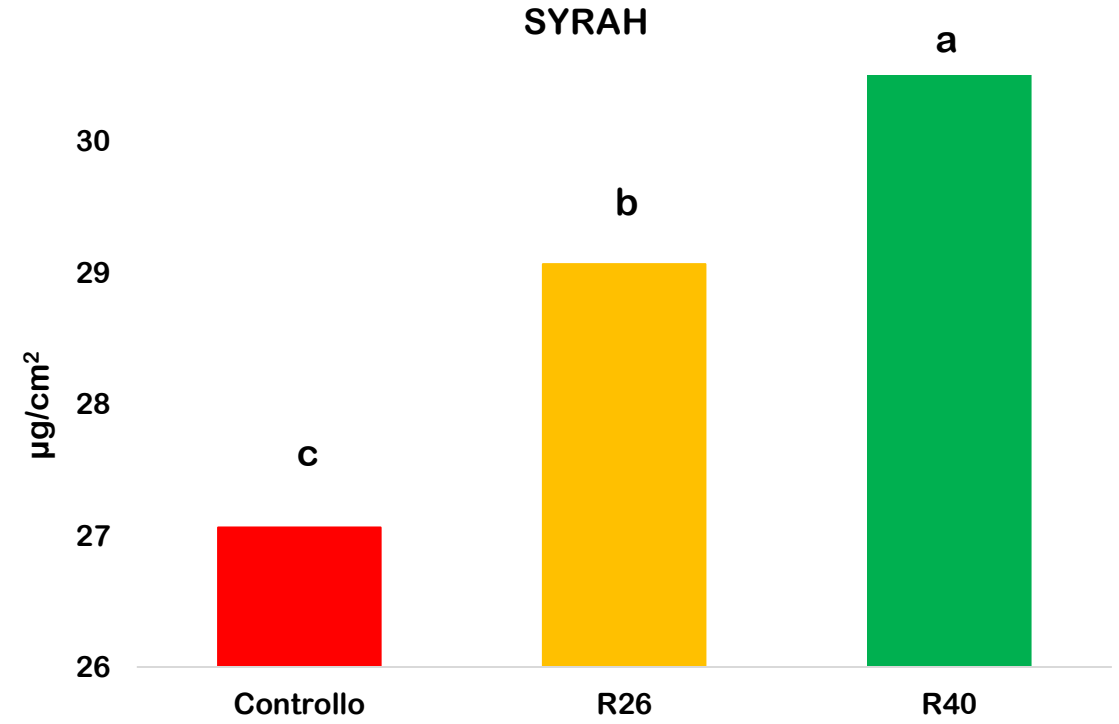
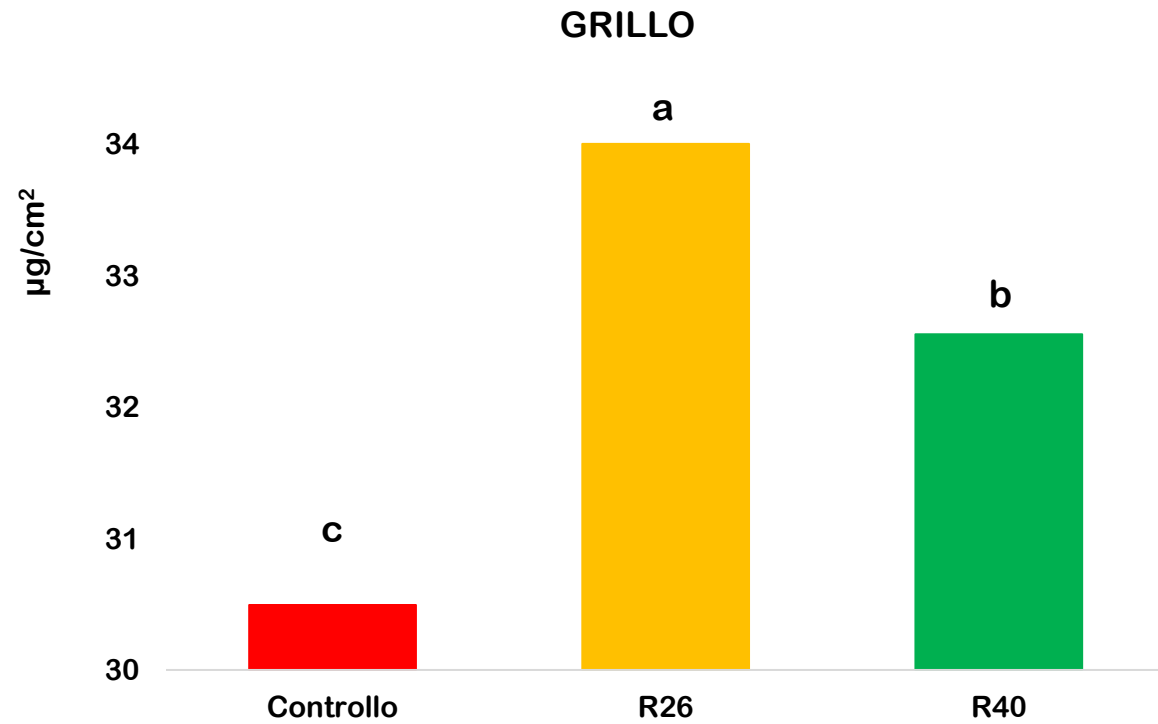
Lunghezza internodo



SYRAH

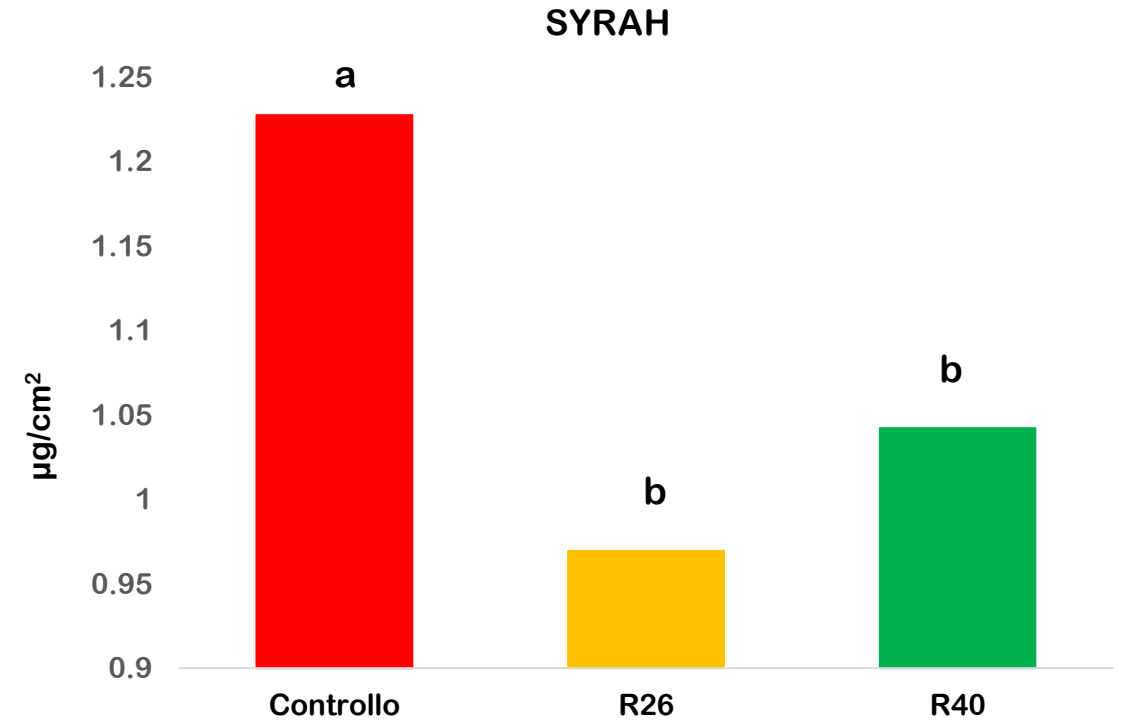
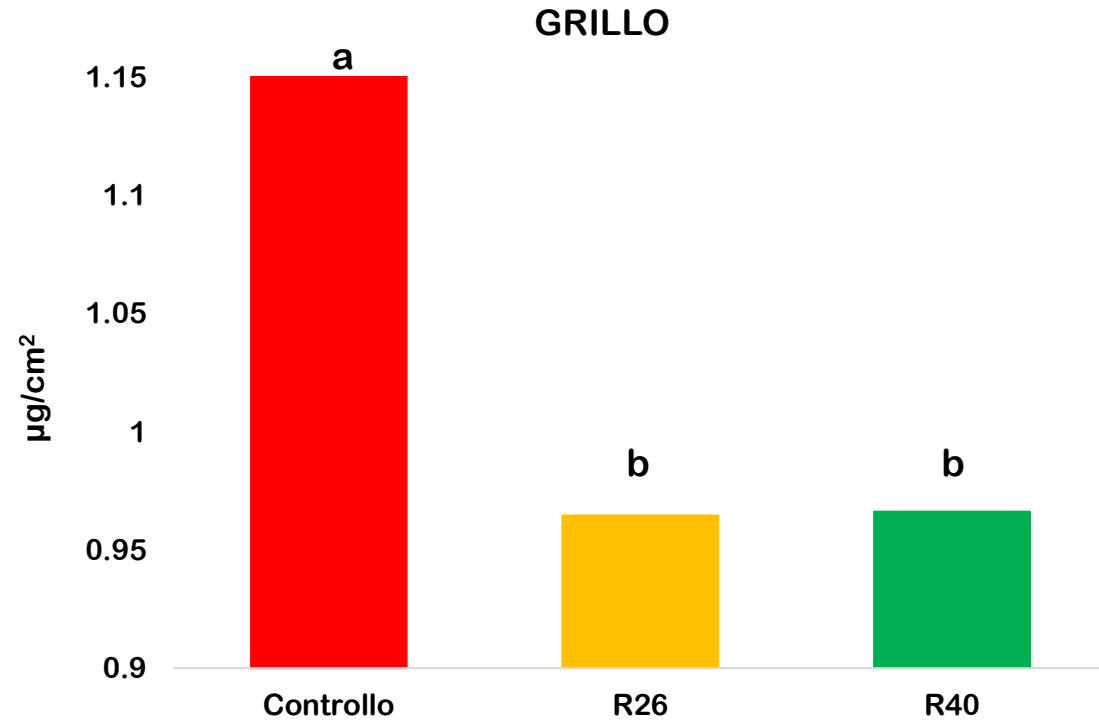


Clorofilla



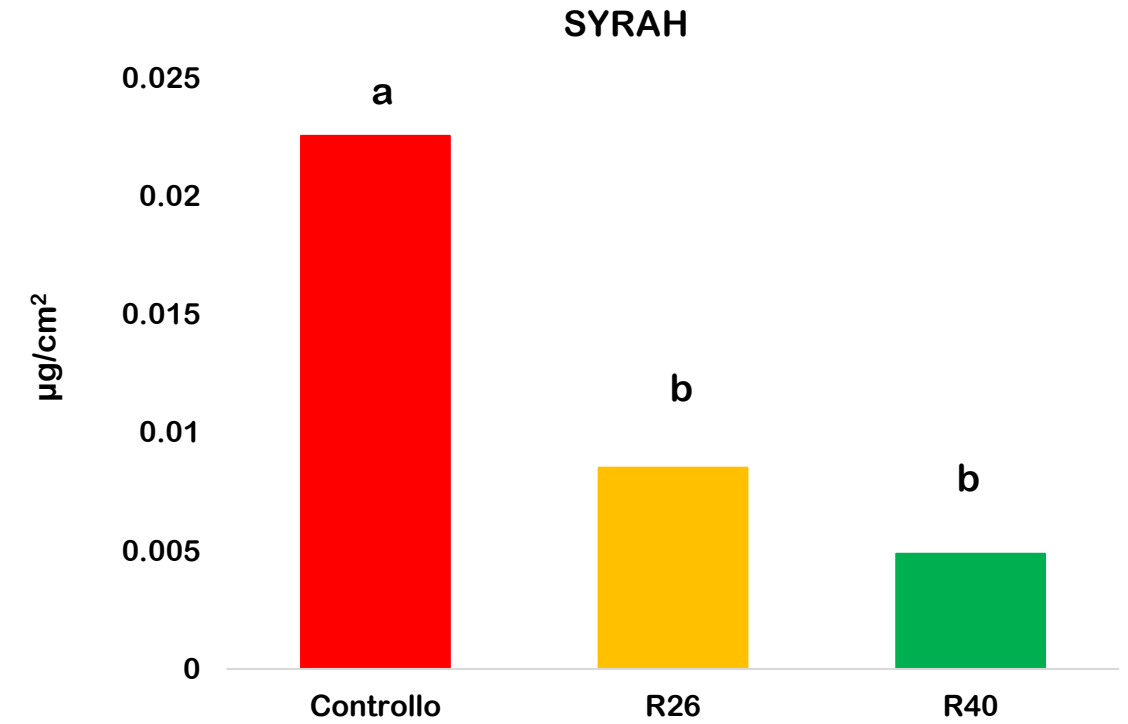
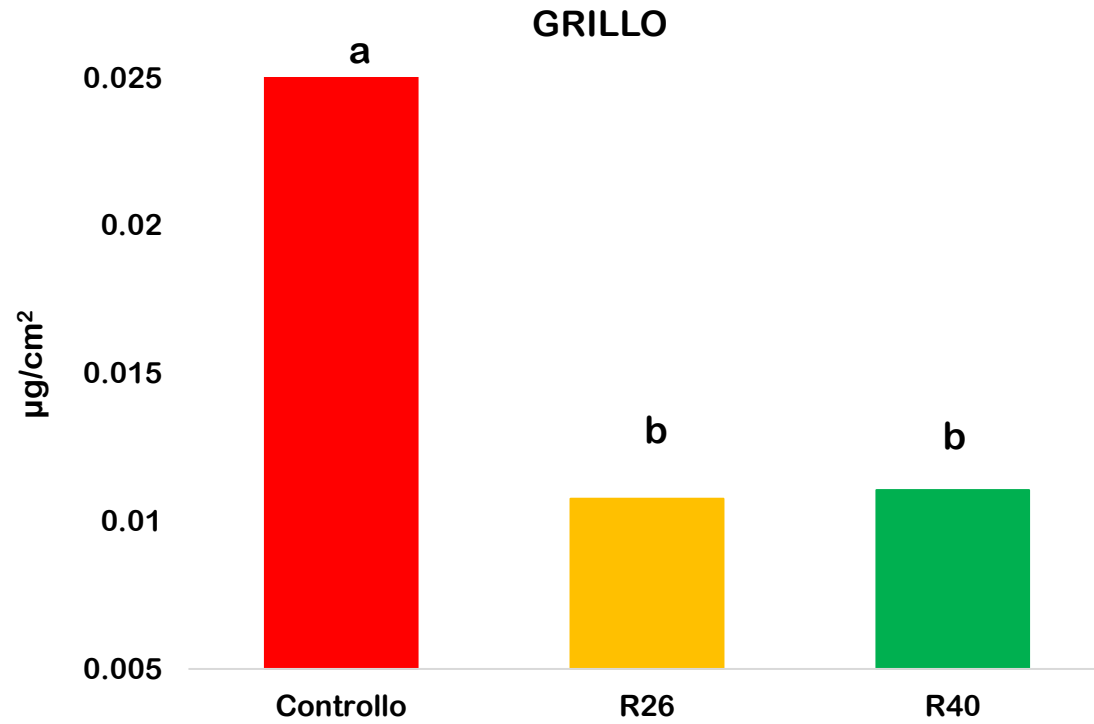
Means that do not share a letter are significantly different

Flavonoidi



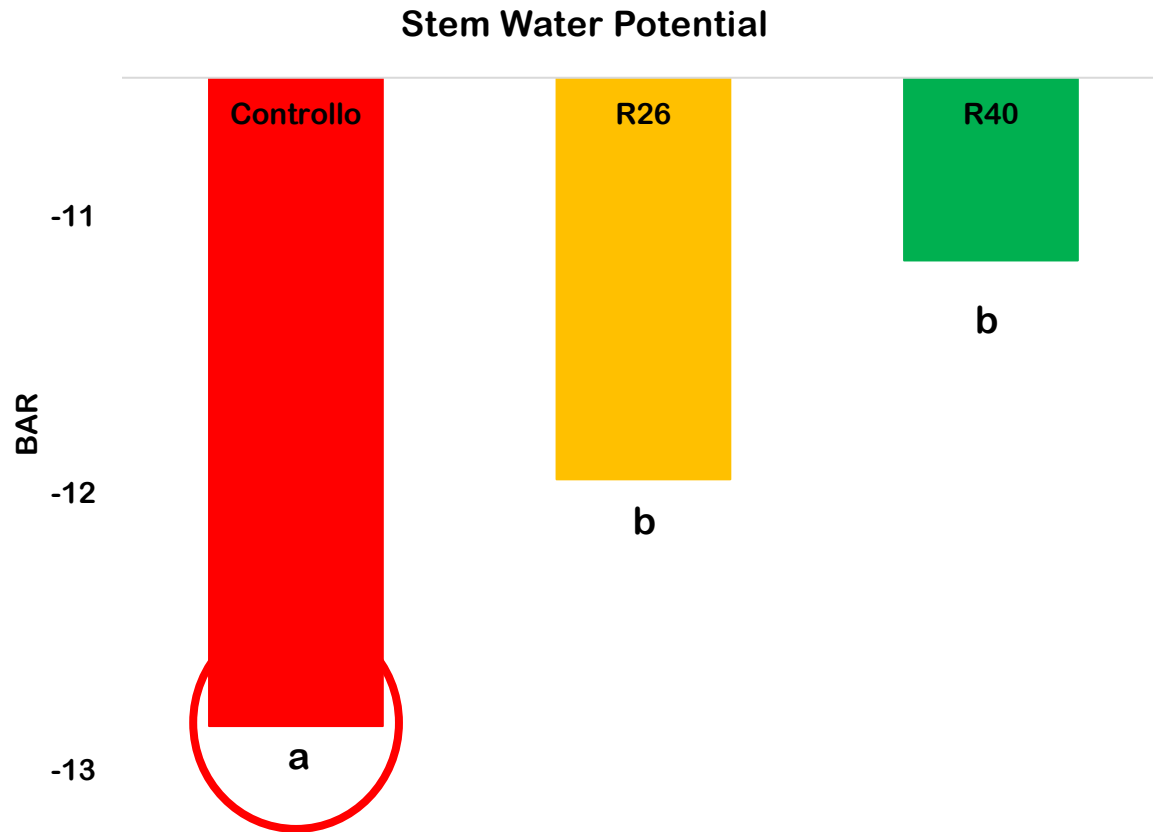
Means that do not share a letter are significantly different

Antociani



Means that do not share a letter are significantly different

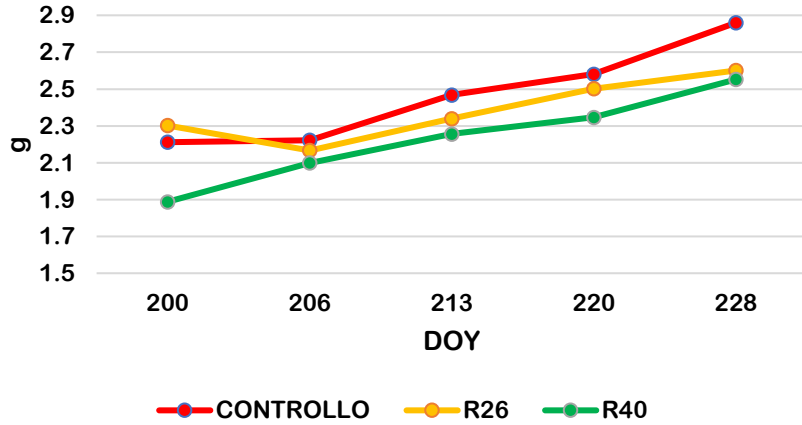
Stato idrico (Stem Ψ)



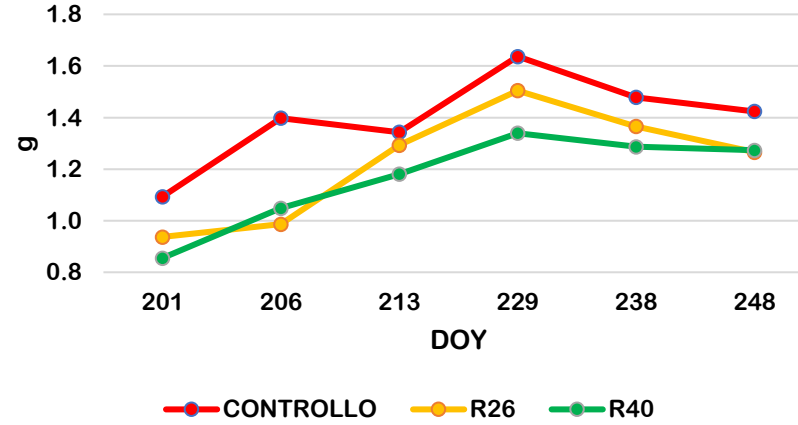
Dati produttivi

Peso dell'acino

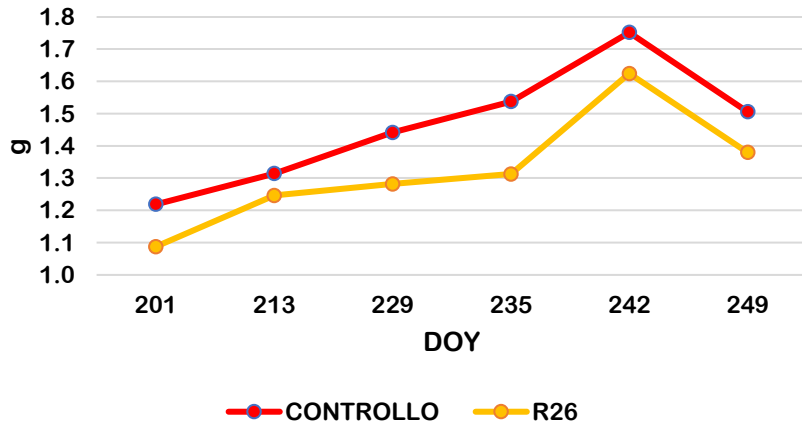
GRILLO



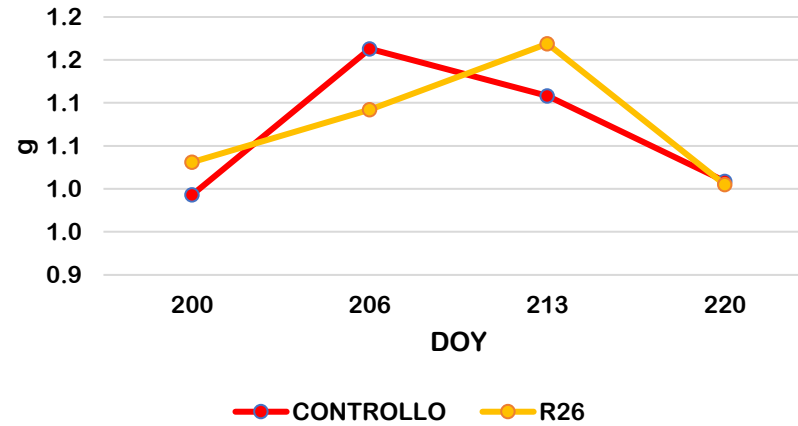
SYRAH



NERO D'AVOLA



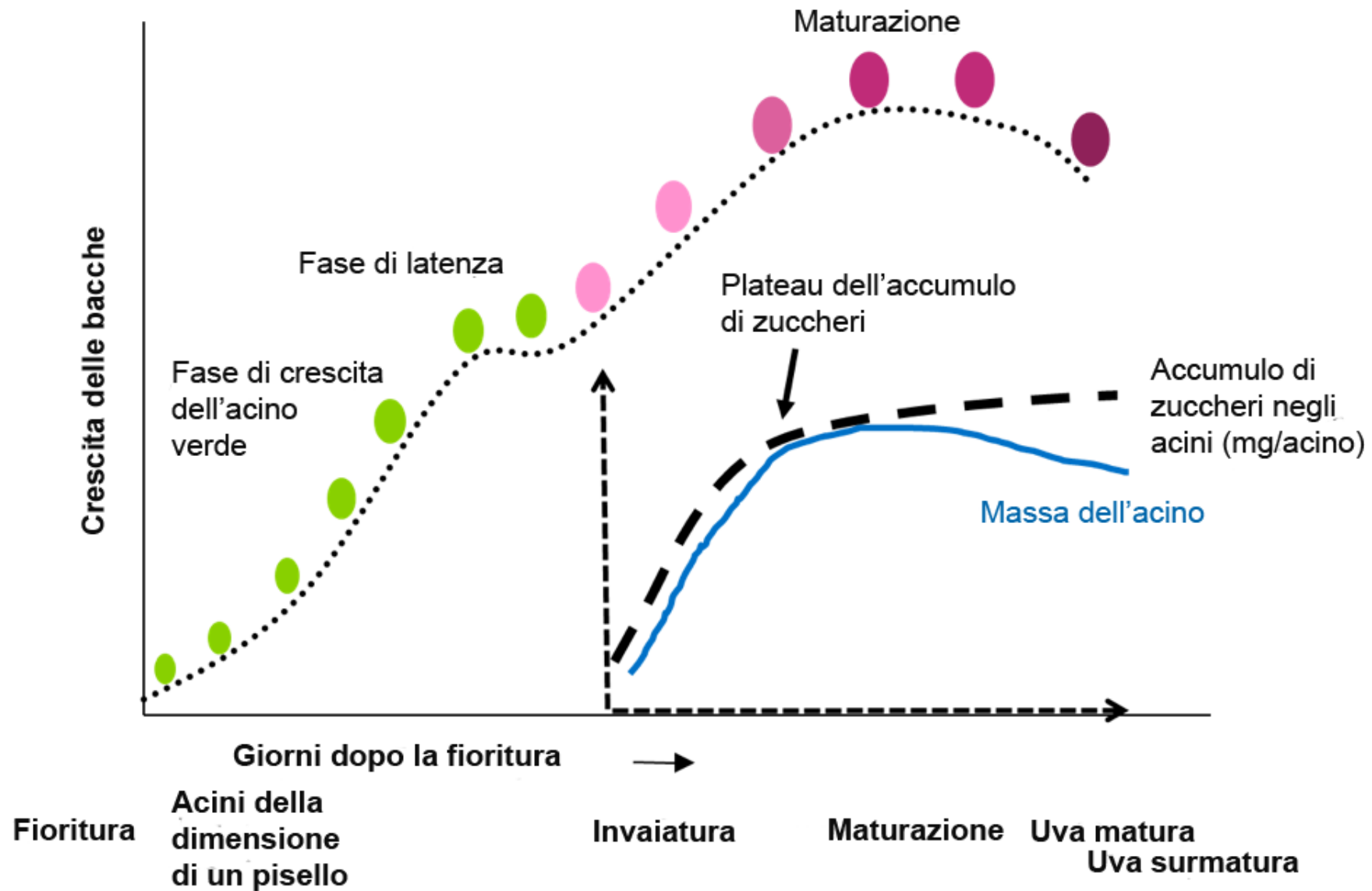
CHARDONNAY



Grouping Information Using the Tukey Method and 95% Confidence

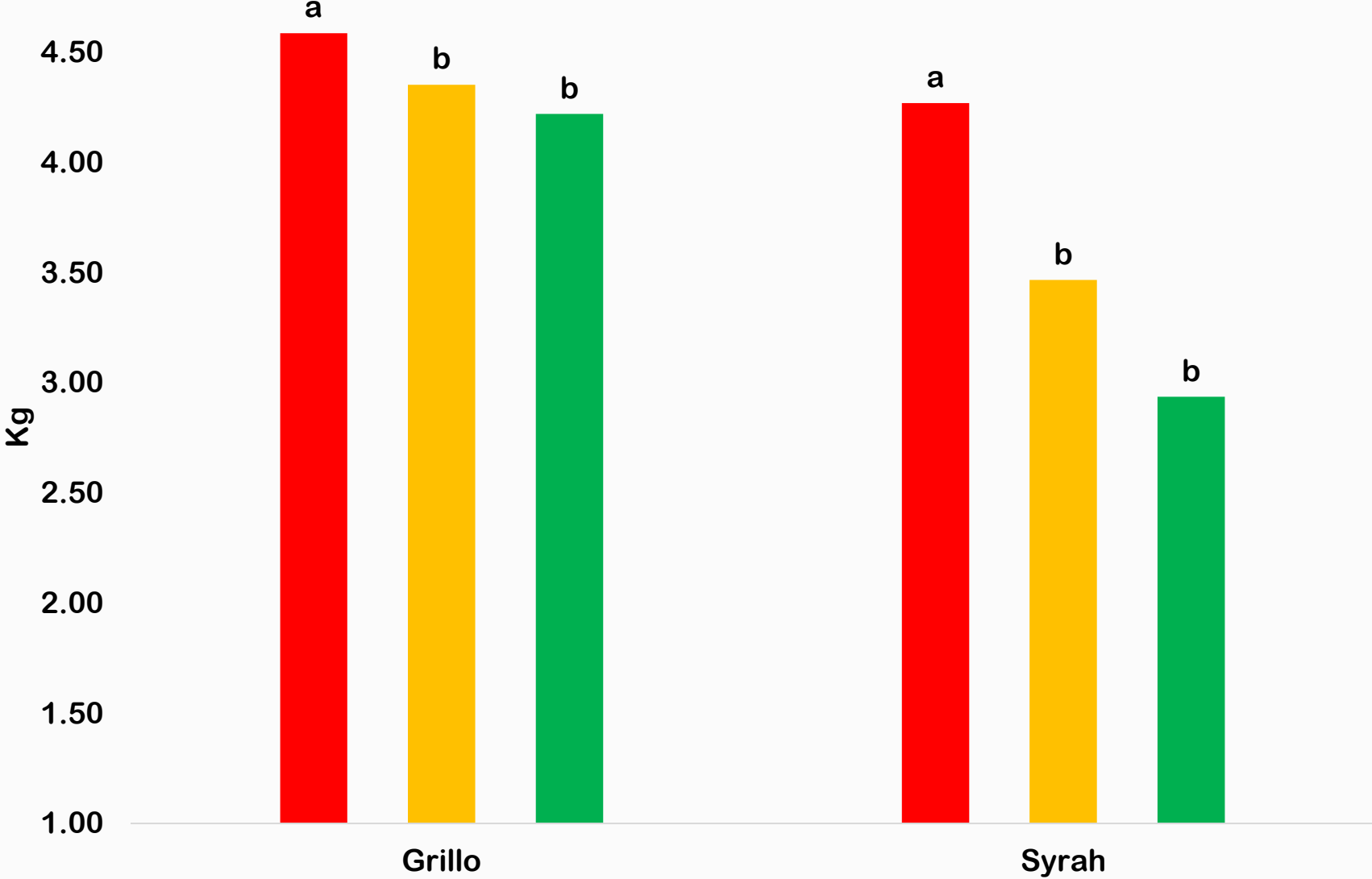
VARIETÀ	TESI	Mean (g)	Grouping
Grillo	CONTROLLO	2,86	A
Grillo	R26	2,60	B
Grillo	R40	2,55	B
Syrah	CONTROLLO	1,43	A
Syrah	R40	1,27	B
Syrah	R26	1,26	B
Nero d'Avola	CONTROLLO	1,51	A
Nero d'Avola	R26	1,38	B
Chardonnay	CONTROLLO	1,01	A
Chardonnay	R26	1,00	A

Means that do not share a letter are significantly different.



PRODUZIONE/PIANTA

■ Controllo ■ R26 ■ R40



Means that do not share a letter are significantly different

RILIEVO	VARIETÀ	TESI	% INVAIATURA
1	Grillo	Controllo	94,7
1	Grillo	R26	80,0
1	Grillo	R40	42,7
2	Grillo	Controllo	100,0
2	Grillo	R26	92,7
2	Grillo	R40	88,0

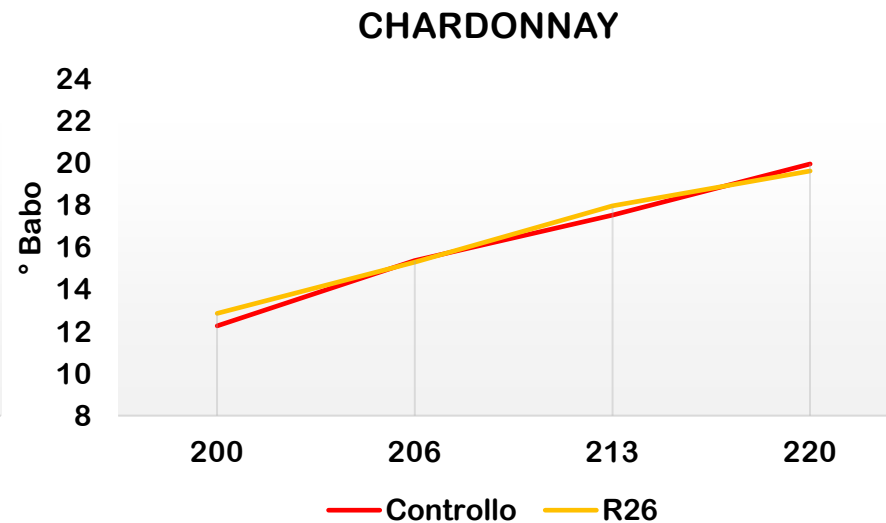
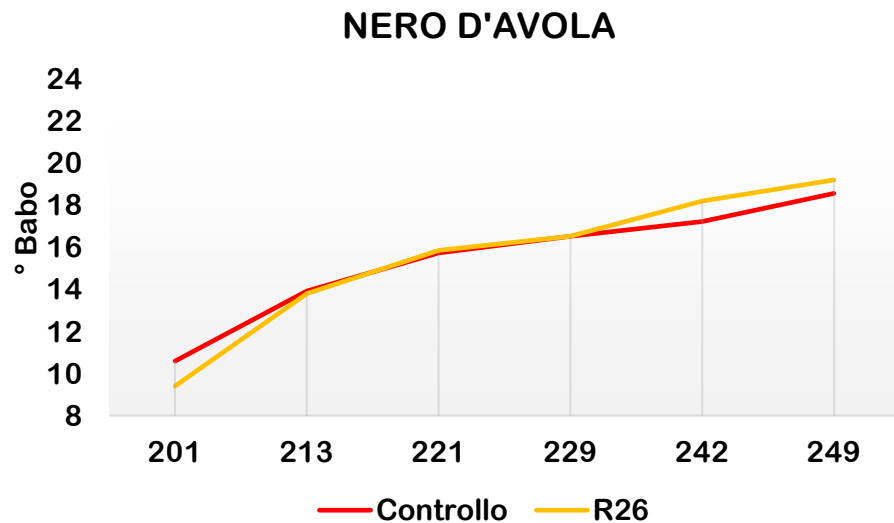
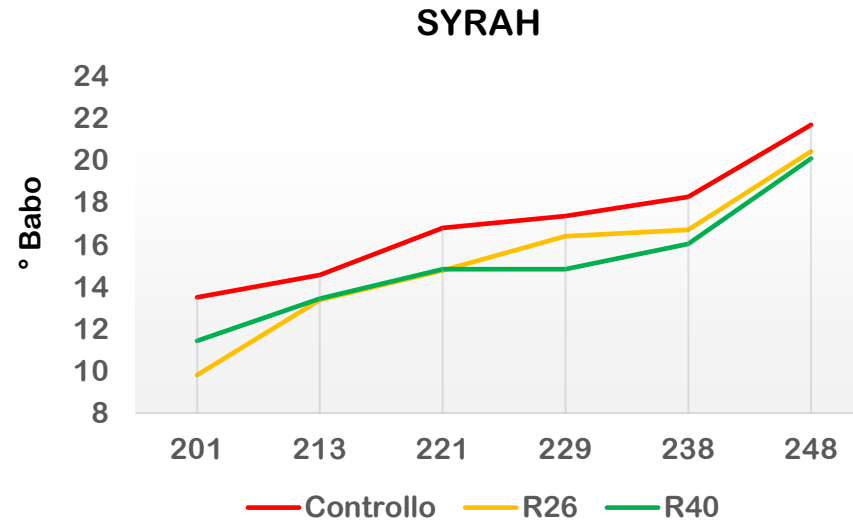
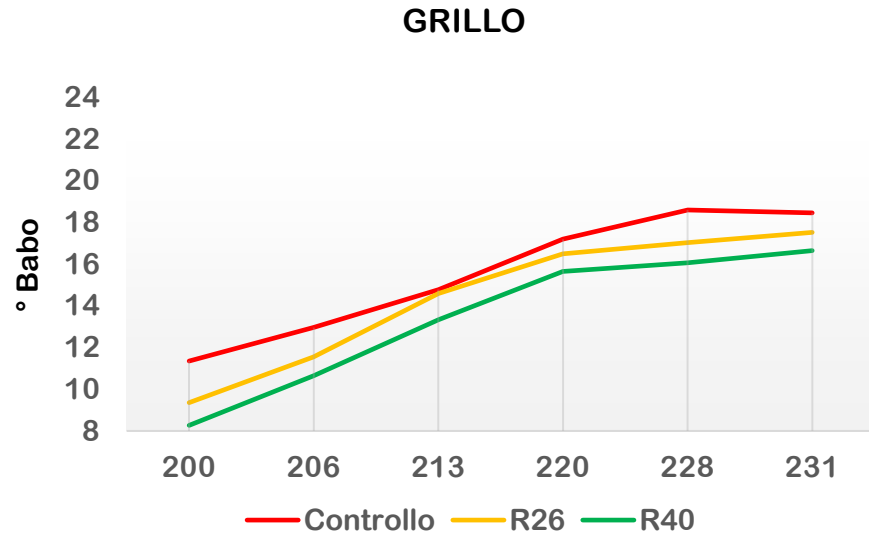
RILIEVO	VARIETÀ	TESI	% INVAIATURA
1	Syrah	Controllo	79,3
1	Syrah	R26	49,3
1	Syrah	R40	28,7
2	Syrah	Controllo	98,7
2	Syrah	R26	73,3
2	Syrah	R40	71,3

RILIEVO	VARIETÀ	TESI	% INVAIATURA
1	N. d'Avola	Controllo	64,0
1	N. d'Avola	R26	49,3
2	N. d'Avola	Controllo	95,3
2	N. d'Avola	R26	78,0



Dati qualitativi

Solidi Solubili Totali



Grouping Information Using the Tukey Method and 95% Confidence

VARIETÀ	TESI	Mean	Grouping
Grillo	Controllo	18,45	A
Grillo	R26	17,52	B
Grillo	R40	16,63	B
Syrah	Controllo	21,69	A
Syrah	R26	20,44	B
Syrah	R40	19,60	B

Nero d'Avola	Controllo	18,56	A
Nero d'Avola	R26	19,20	A

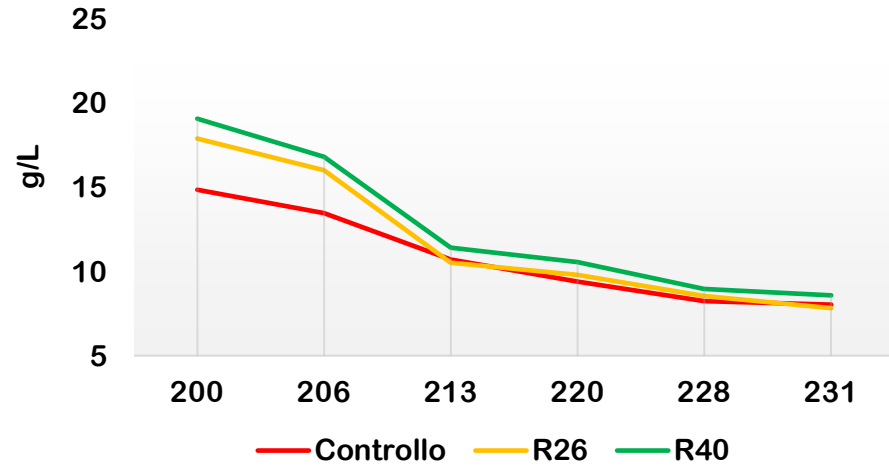
Chardonnay	Controllo	19,97	A
Chardonnay	R26	19,63	A

Means that do not share a letter are significantly different.

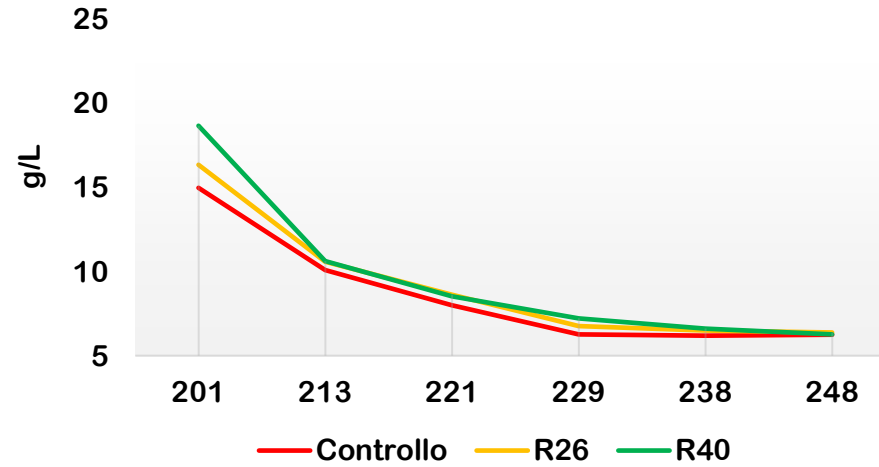
Dati qualitativi

Acidità titolabile

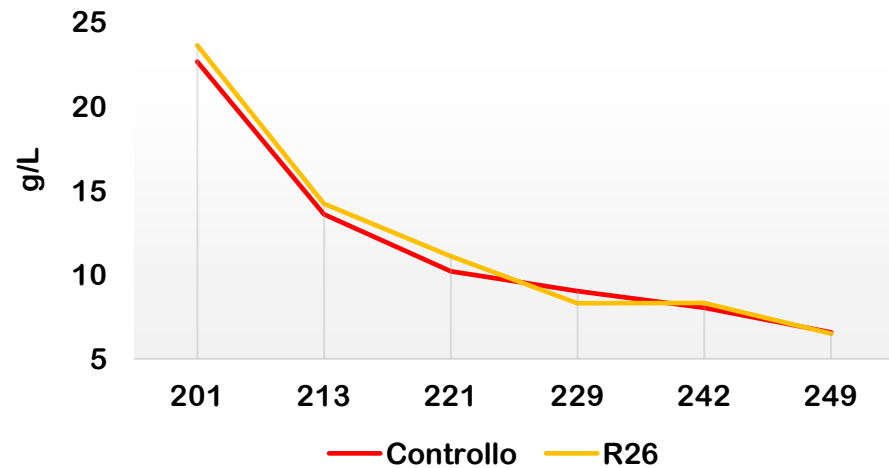
GRILLO



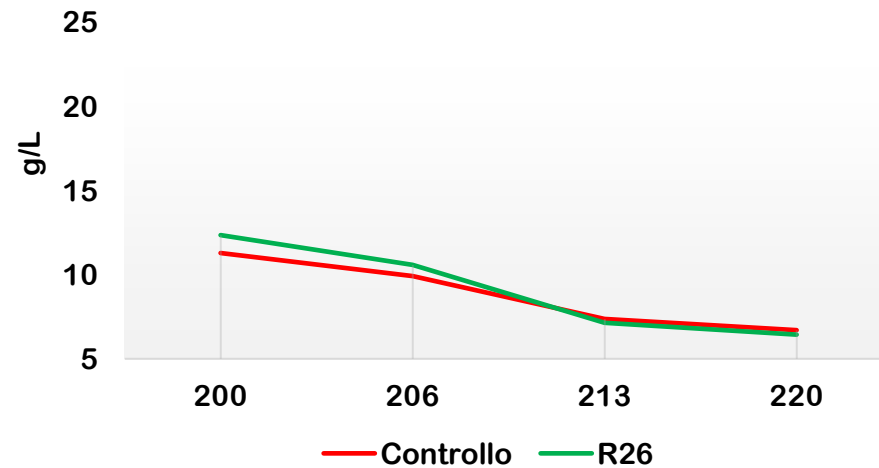
SYRAH



NERO D'AVOLA



CHARDONNAY



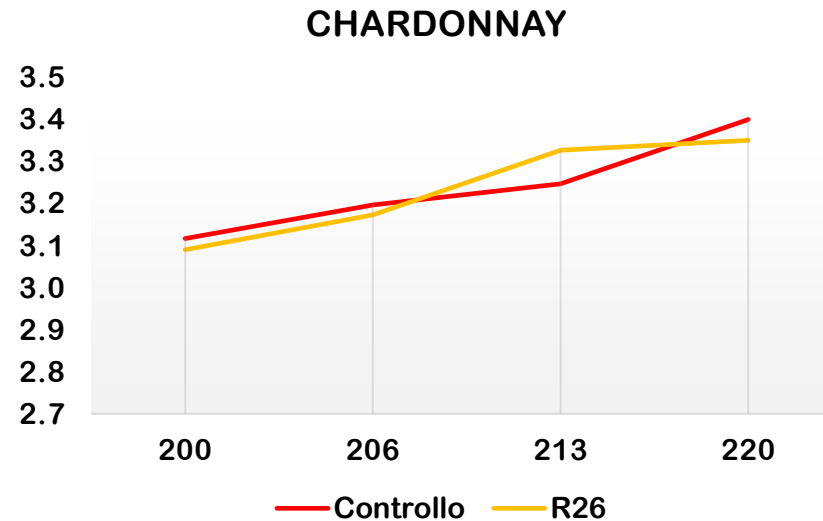
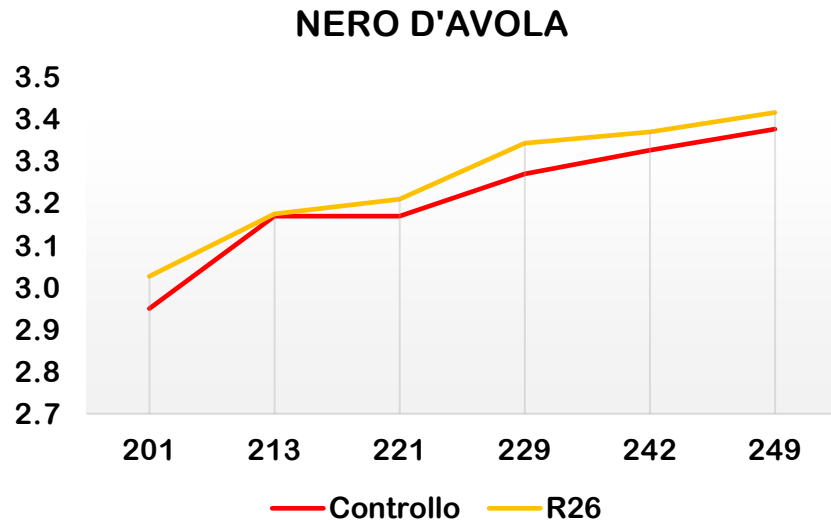
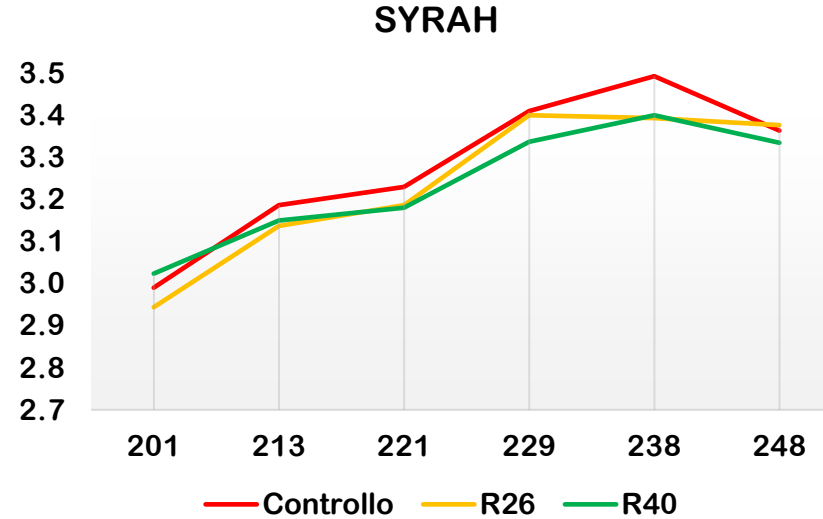
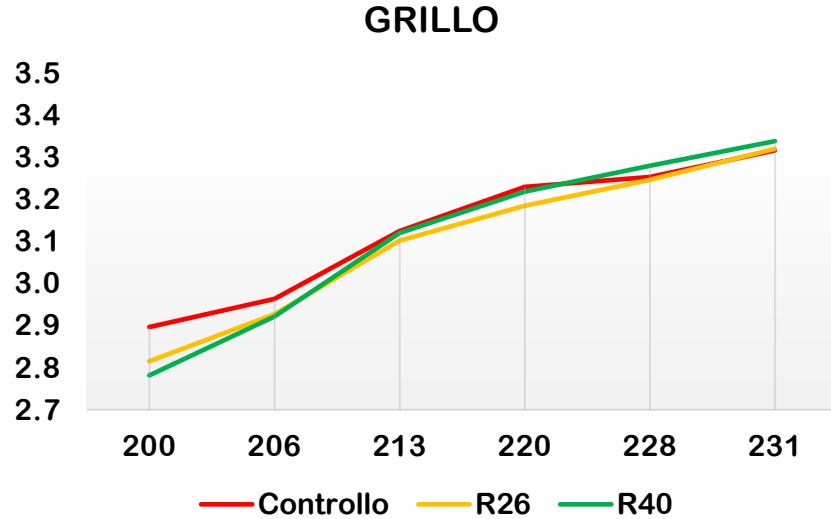
Grouping Information Using the Tukey Method and 95% Confidence

VARIETÀ	TESI	Mean	Grouping
Grillo	Controllo	8,04	A
Grillo	R26	7,83	A
Grillo	R40	8,60	A
Syrah	Controllo	6,25	A
Syrah	R26	6,39	A
Syrah	R40	6,28	A
Nero d'Avola	Controllo	6,58	A
Nero d'Avola	R26	6,50	A
Chardonnay	Controllo	6,70	A
Chardonnay	R26	6,43	A

Means that do not share a letter are significantly different.

Dati qualitativi

pH



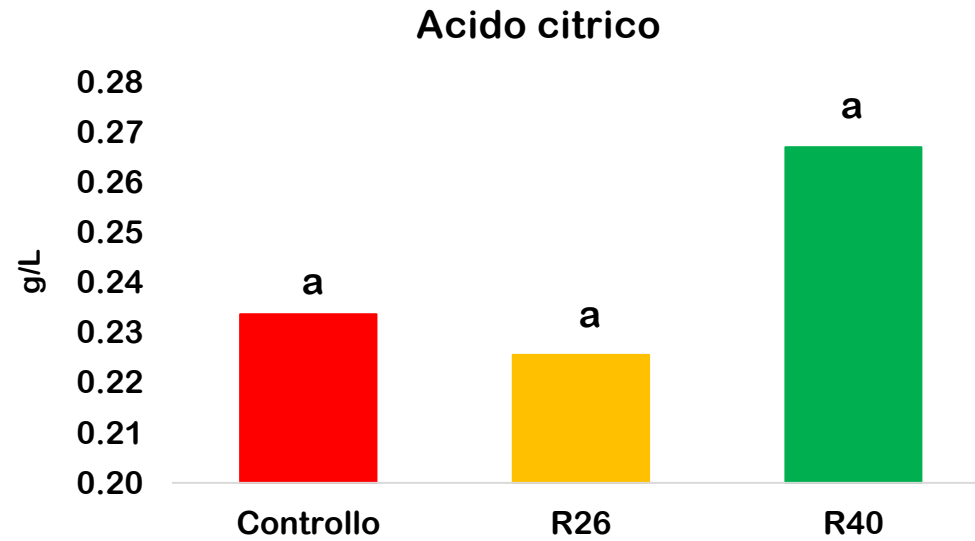
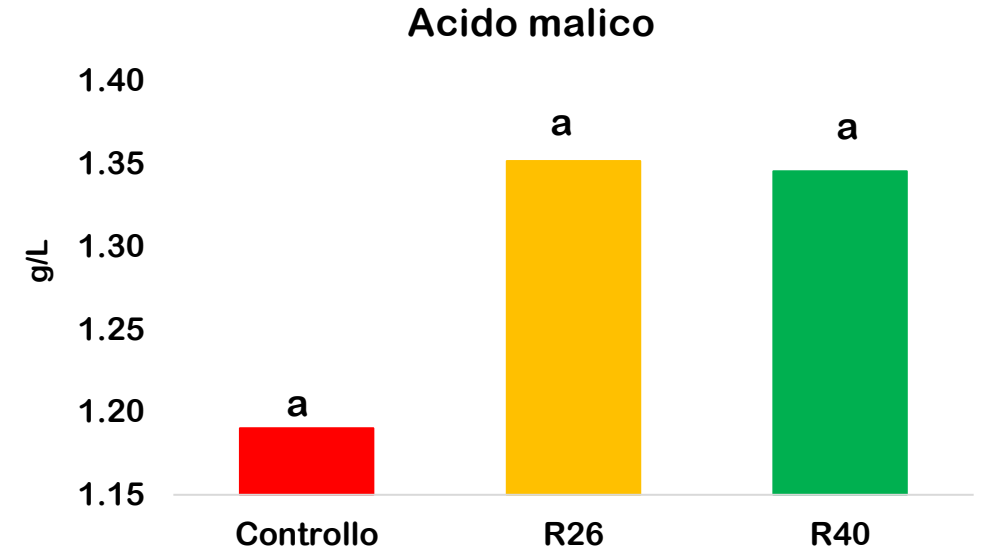
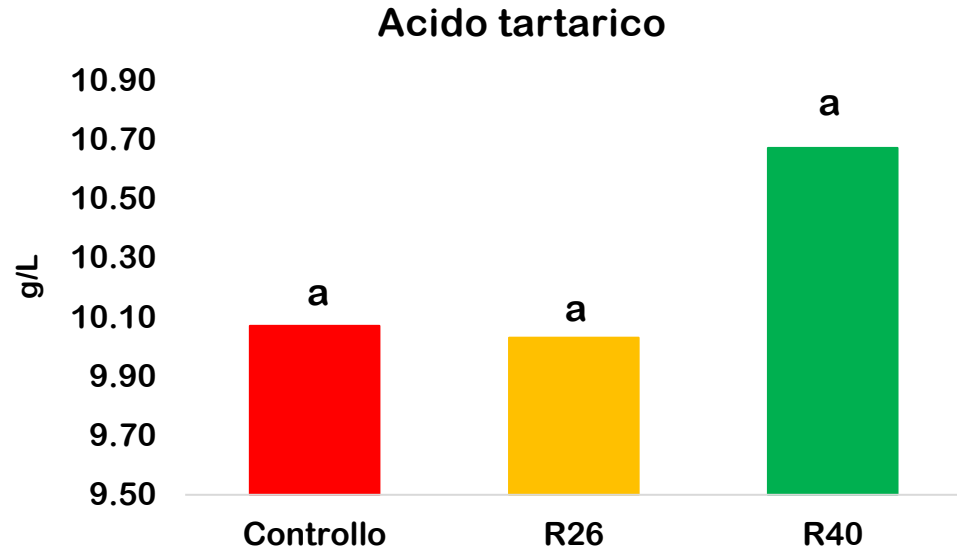
Grouping Information Using the Tukey Method and 95% Confidence

VARIETÀ	TESI	Mean	Grouping
Grillo	Controllo	3,32	A
Grillo	R26	3,32	A
Grillo	R40	3,34	A
Syrah	Controllo	3,36	A
Syrah	R26	3,38	A
Syrah	R40	3,34	A
Nero d'Avola	Controllo	3,38	A
Nero d'Avola	R26	3,42	A
Chardonnay	Controllo	3,40	A
Chardonnay	R26	3,35	A

Means that do not share a letter are significantly different.

Dati qualitativi

Acidi organici



Controllo



Stato	tesi	%	Grouping
Disseccati	Controllo	4,81	A
Appassiti	Controllo	14,98	A
Scottati	Controllo	18,78	A
Sani	Controllo	61,43	B

R26



Stato	tesi	%	Grouping
Disseccati	R26	2,08	B
Appassiti	R26	8,59	B
Scottati	R26	13,09	A
Sani	R26	76,24	A

R40



Stato	tesi	%	Grouping
Disseccati	R40	0,26	B
Appassiti	R40	6,33	B
Scottati	R40	14,43	A
Sani	R40	78,99	A

Conclusioni

1

Effetti sul
microclima

2

Riduzione della
radiazione
luminosa

3

Variazione della
dimensione
dell'acino

4

Limitata influenza
sulla maturità
tecnologica

5

Significativa
influenza sulla
maturità fenolica