

TABLE 1. The influence of canopy treatments, vine development and cordon height on the average canopy characteristics of Pinotage vines in climate region 2 (2003 - 2007).

Parameters	20 cm Bush vine		30 cm Bush vine		30 cm Trellis		60 cm Trellis	
	OC ¹	MC ²	OC	MC	OC	MC	OC	MC
Total marks allocation for description of canopy characteristics	62.5 ab*	55.0 bc	65.3 a	55.6 bc	61.6 ab	55.2 d	64.0 a	59.1 cd
Canopy density (bunches)	**				1.1 b	1.7 a	1.1 b	1.3 ab
Canopy density (leaf layers)					2.6 b	3.8 a	2.8 b	3.9 a
Total canopy density					3.8 b	5.5 a	3.9 b	5.2 a
% Shade bunches					81.5 a	88.3 a	83.3 a	87.8 a
% Shade leaves					39.0 b	52.0 a	39.3 b	50.8 a

* Figures for parameters followed by the same letter do not differ significantly ($p \leq 0.05$).

** The point quadrant method to determine the number of foliage layers was not applied to the bush vines.

¹ OC – Optimal canopy management, suckering to only two spurs per bearer, tipping, topping, spurs positioned and foliage removed where more than three foliage layers occurred.

² MC – Suckering between bearers and the trunks only (all spurs budding on the bearer are left in place), tipping, topping, spurs positioned but no foliage removed.

TABLE 2a. The influence of canopy management, vine development and cordon height on the average viticultural performance of Pinotage in climate region 2 (2003 - 2007).

Vine development	Canopy management	Harvest date	Yield (t/ha)	Number of bunches /vine	Bunch-mass (g)	Berry-mass (g)	Berry volume (mL)	Sugar (°B)	Acid (g/L)	pH	Skin colour	
											420 nm	520 nm
20 cm Bush vine	OC ¹	5 Febr.	3.73 d*	10 c	112.6 bc	1.51 a	1.41 a	25.2 ab	7.4 a	3.33 ab	0.417 ab	1.938 ab
	MC ²	7 Febr.	5.26 d	15 bc	104.5 c	1.55 a	1.43 a	25.5 a	7.1 abc	3.36 ab	0.339 ab	1.811 b
30 cm Bush vine	OC	5 Febr.	5.15 d	12 c	129.0 a	1.52 a	1.46 a	25.1 ab	7.3 ab	3.29 b	0.398 b	1.846 ab
	MC	6 Febr.	7.48 c	17 bc	131.3 a	1.54 a	1.44 a	25.4 ab	7.1 abc	3.33 ab	0.423 ab	1.986 ab
30 cm Trellis	OC	15 Febr.	9.03 cb	23 b	119.7 abc	1.52 a	1.38 a	25.0 ab	6.6 d	3.39 a	0.407 b	1.912 ab
	MC	15 Febr.	10.63 b	27 ab	118.7 abc	1.51 a	1.39 a	25.1 ab	6.8 dc	3.36 ab	0.418 ab	1.922 ab
60 cm Trellis	OC	15 Febr.	10.54 b	23 b	133.3 a	1.53 a	1.43 a	24.9 ab	7.0 bcd	3.35 ab	0.427 ab	1.960 ab
	MC	16 Febr.	13.03 a	30 a	125.9 ab	1.50 a	1.41 a	24.8 b	6.9 bcd	3.37 a	0.437 a	2.017 a

¹ OC = Optimal canopy management, suckering to two spurs per bearer, tipping, topping, spurs positioned and foliage removed where more than three foliage layers occurred. ($p \leq 0.05$).

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* Figures for parameters within climate regions followed by the same letter do not differ significantly from each other.

TABLE 2b. The influence of vine development and cordon height on the average viticultural performance of Pinotage in climate region 2 i.r.o. canopy management (2003 - 2007).

Vine development	Yield (t/ha)	Number of bunches /vine	Bunch mass (g)	Berry-mass (g)	Berry volume (mL)	Sugar (°B)	Acid (g/L)	pH	Berry skin colour 420 nm	Berry skin colour 520 nm
20 cm Bush vine	4.50 d*	13 b	108.4 c	1.53 a	1.42 a	25.3 a	7.3 a	3.35 a	0.408 a	1.874 a
30 cm Bush vine	6.31 c	14 b	130.2 a	1.53 a	1.44 a	25.2 ab	7.2 ab	3.31 b	0.410 a	1.907 a
30 cm Trellis	9.81 b	25 a	119.2 b	1.52 a	1.42 a	25.1 ab	6.7 c	3.38 a	0.412 a	1.917 a
60 cm Trellis	11.79 a	27 a	129.5 ab	1.52 a	1.42 a	24.8 b	6.9 bc	3.36 ab	0.432 a	1.988 a

* Figures for parameters within climate regions followed by the same letter do not differ significantly from each other ($p \leq 0.05$).

TABLE 3a. The influence of canopy management, vine development and cordon height on the wine and must composition of Pinotage in climate region 2 (2003 - 2007).

Vine develop- ment	Canopy manage- ment	Alcohol	Extract	Sugar	Acid	pH	Wine colour	Wine colour	Total phenols (mg/L)
		(%)	(g/L)	(g/L)	(g/L)		420 nm	520 nm	
20 cm Bush vine	OC ¹	15.3 ab*	32.2 a	2.1 a	5.8 a	3.90 ab	0.841 ab	1.374 a	1782 a
	MC ²	15.5 a	31.7 a	2.4 a	5.6 ab	3.97 a	0.861 a	1.355 a	1603 a
30 cm Bush vine	OC	15.1 abc	30.3 a	2.1 a	5.8 a	3.88 ab	0.802 ab	1.364 a	1672 a
	MC	15.2 abc	31.2 a	2.1 a	5.7 ab	3.93 ab	0.823 ab	1.360 a	1736 a
30 cm Trellis	OC	15.0 abc	31.1 a	2.1 a	5.5 b	3.81 b	0.795 ab	1.314 a	1830 a
	MC	15.0 abc	31.4 a	2.0 a	5.6 ab	3.93 ab	0.788 ab	1.284 a	1921 a
60 cm Trellis	OC	14.8 bc	31.4 a	2.0 a	5.7 ab	3.90 ab	0.789 ab	1.333 a	1866 a
	MC	14.7 c	31.4 a	2.2 a	5.8 a	3.88 ab	0.772 b	1.281 a	2017 a

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TABLE 3b. The influence of vine development and cordon height on the wine and must composition of Pinotage in climate region 2 (2003 - 2007).

Vine develop-ment	Alcohol (%)	Extract (g/L)	Sugar (g/L)	Acid (g/L)	pH	Berry skin colour 420 nm	Berry skin colour 520 nm	Wine colour 420 nm	Wine colour 520 nm	Total phenols (mg/L)
20 cm Bush vine	15.4 a*	31.9 a	2.1 a	5.7 ab	3.94 a	0.408 a	1.874 a	0.851 a	1.365 a	1692 a
30 cm Bush vine	15.1 ab	30.8 a	2.0 a	5.8 a	3.84 a	0.413 a	1.920 a	0.812 ab	1.362 a	1703 a
30 cm Trellis	15.0 bc	31.2 a	2.0 a	5.5 b	3.91 a	0.412 a	1.917 a	0.791 b	1.300 a	1773 a
60 cm Trellis	14.7 c	31.4 a	2.0 a	5.7 ab	3.89 a	0.431 a	1.988 a	0.780 ab	1.307 a	1813 a

* Figures for parameters within climate regions followed by the same letter do not differ significantly from each other ($p \leq 0.05$).

TABLE 4. The influence of canopy treatments, vine development and cordon height on the average wine colour and quality of Pinotage wines in climate region 2 (2003 - 2006).

Treatment	Colour (%)						Overall wine quality (%)					
	2003	2004	2005	2006	2007	Ave.	2003	2004	2005	2006	2007	Ave.
20 cm Bush vine OC¹	85.7 ab*	88.8 a	85.7 a	82.0 ab	88.8 a	86.2	56.4 a	62.5 a	56.4 ab	57.1 a	60.4 a	58.6
20 cm Bush vine MC²	85.8 ab	87.6 a	85.8 a	82.0 ab	89.5 a	86.1	57.8 a	60.5 a	57.8 ab	57.5 a	60.0 a	58.7
30 cm Bush vine OC	86.7 a	82.2 a	86.7 a	85.0 a	87.7 a	85.7	60.8 a	62.1 a	60.8 a	54.3 a	59.8 a	59.6
30 cm Bush vine MC	86.8 a	84.2 a	86.8 a	78.0 b	88.6 a	84.9	57.4 a	59.6 a	57.4 ab	51.3 a	62.4 a	57.6
30 cm Trellis OC	85.8 a	75.8 a	85.8 a	79.0 ab	87.3 a	82.7	56.4 a	60.6 a	56.4 ab	54.3 a	61.9 a	57.9
30 cm Trellis MC	82.3 b	77.0 a	82.3 b	78.0 b	88.6 a	81.6	54.7 a	57.2 a	54.7 b	57.1 a	64.4 a	57.6
60 cm Trellis OC	85.3 ab	77.4 a	85.3 a	81.0 ab	85.5 a	82.9	58.2 a	59.2 a	58.2 ab	57.7 a	55.2 a	58.1
60 cm Trellis MC	84.2 b	75.6 a	84.2 ab	79.0 ab	85.2 a	81.6	55.7 a	58.5 a	55.7 ab	55.9 a	61.7 a	57.5

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The shaded boxes indicate where significant differences between the canopy management treatments occurred.

TABLE 5. The influence of vine development in climate region 2 on the average wine colour and quality of 2003 - 2006 Pinotage wines.

Vine development treatment	Colour (%)						Overall quality (%)					
	2003	2004	2005	2006	2007	Ave.	2003	2004	2005	2006	2007	Ave.
20 cm Bush vine	82.4 ab*	84.2 a	85.7 ab	81.9 a	89.2 a	86.2	62.1 a	60.5 a	57.5 a	57.3 a	60.2 a	58.7
30 cm Bush vine	84.8 a	79.9 ab	86.9 a	81.4 a	88.2 a	85.3	62.7 a	57.5 a	60.0 a	52.1 b	61.1 a	58.6
30 cm Trellis	82.0 ab	76.4 b	83.7 b	78.6 a	88.0 a	82.3	61.8 a	57.5 a	56.1 a	55.8 ab	63.2 a	57.8
60 cm Trellis	80.7 b	75.9 b	85.0 ab	79.6 a	85.3 a	82.3	60.7 a	58.7 a	58.3 a	56.9 ab	58.5 a	57.8

* Figures for parameters within climate regions followed by the same letter do not differ significantly from each other ($p \leq 0.05$).

TABLE 6. The influence of vine development and cordon height on the average wine colour and quality performance of 6 and 24 month old 2003 Pinotage wines in climate region 2.

Parameters	20 cm Bush vine				30 cm Bush vine				30 cm Trellis				60 cm Trellis			
	OC ¹		MC ²		OC		MC		OC		MC		OC		MC	
Wine age	6 mnth	24 mnth	6 mnth	24 mnth	6 mnth	24 mnth	6 mnth	24 mnth	6 mnth	24 mnth	6 mnth	24 mnth	6 mnth	24 mnth	6 mnth	24 mnth
Colour (%)	81.5 ab*	87.6 a	83.4 ab	89.3 a	81.1 ab	87.3 a	83.0 ab	90.1 a	85.3 a	90.4 a	84.4 a	89.8 a	83.5 ab	90.5 a	77.8 b	87.8 a
Overall quality (%)	64.9 a	60.3 a	59.3 a	59.7 a	59.3 a	58.1 a	64.3 a	59.2 a	64.3 a	60.8 a	61.2 a	60.7 a	62.1 a	61.5 a	59.4 a	56.2 a

* Figures for parameters within wine ages followed by the same letter do not differ significantly from each other ($p \leq 0.05$).

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