

TABLE 1a. The influence of canopy treatments, vine development and cordon height on the canopy characteristics of Pinotage vines in climate region 3 (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	63.4 ab*	57.0 c	66.0 a	56.8 c	61.7 ab	55.2 c	65.3 a	59.0 bc
Canopy density (bunches)					1.17 a**	1.14 a	1.11 a	1.15 a
Canopy density (leaf layers)					2.90 b	4.09 a	2.88 b	4.13 a
Total canopy density					4.17 b	5.23 a	3.99 b	5.28 a
% Shade bunches					82.2 b	91.0 a	81.8 b	94.1 a
% Shade leaves					37.7 b	52.5 a	36.5 b	51.8 a

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

** 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 1b. The influence of vine development and cordon height on the canopy characteristics of Pinotage vines in climate region 3 (2003 - 2007).

Parameters	20 cm Bush vine	30 cm Bush vine	30 cm Trellis	60 cm Trellis
Total marks allocation for description of canopy characteristics	60.20 b*	61.40 ab	63.44 ab	67.15 a
Canopy density (bunches)			1.15** a	1.12 a
Canopy density (leaf layers)			3.49 a	3.50 a
Total canopy density **			4.64 a	4.62 a
% Shade bunches			86.6 a	88.0 a
% Shade leaves			45.1 a	44.2 a

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

TABLE 1c. The influence of canopy management on the canopy characteristics of Pinotage vines in climate region 3 (2003 - 2007).

Parameters	OC ¹	MC ²
Total marks allocation for description of canopy characteristics	64.10* a	56.97 b
Canopy density (bunches)	1.14 a**	1.14.a
Canopy density (leaf layers)	2.89 b	4.11 a
Total canopy density	4.03 b	5.25 a
% Shade bunches	82.0 b	92.6 a
% Shade leaves	37.1 b	52.1 a

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** 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 3 (2003 - 2007).

Vine development	Canopy management	Harvest date	Yield	Number of bunches/vine	Bunch-mass	Sugar	Acid	pH	Skin colour	Skin colour
			(t/ha)		(g)	(°B)	(g/L)	420 nm	520 nm	
20 cm Bush vine	OC ¹	6 Feb.	4.83 b*	13 e	115.9 b	25.5 a	6.7 bc	3.33 d	0.403 b	1.769 b
	MC ²	5 Feb.	6.97 b	20 cd	108.5 b	25.2 ab	6.9 abc	3.36 bcd	0.419 ab	1.868 ab
30 cm Bush vine	OC	7 Feb.	6.84 b	17 de	134.4 a	25.3 ab	7.3 a	3.35 dc	0.415 ab	1.846 ab
	MC	8 Feb.	7.27 b	20 cd	120.8 b	25.0 a	7.1 ab	3.34 dc	0.436 ab	1.923 ab
30 cm Trellis	OC	13 Feb.	11.18 a	26 bc	134.0 a	24.8 b	6.9 bc	3.42 abc	0.404 ab	1.797 ab
	MC	16 Feb.	12.08 a	32 ab	120.1 b	25.3 ab	6.5 c	3.44 ab	0.441 a	1.981 a
60 cm Trellis	OC	16 Feb.	12.69 a	28 ab	146.8 a	25.1 ab	6.6 c	3.45 a	0.438 ab	1.968 a
	MC	16 Feb.	13.62 a	33 a	141.0 a	24.7 b	6.8 bc	3.37 abcd	0.411 ab	1.834 ab

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TABLE 2b. The influence of vine development and cordon height on the viticultural performance of Pinotage in climate region 3 i.r.o. canopy management (2003 - 2007).

Vine development	Yield (t/ha)	Number of bunches/vine	Bunch mass (g)	Sugar (°B)	Acid (g/L)	pH	Skin colour 420 nm	Skin colour 520 nm
20 cm Bush vine	5.89 b*	17 b	112.2 b	25.4 a	6.8 b	3.35 b	0.411 a	1.818 a
30 cm Bush vine	7.05 b	18 b	127.7 b	25.1 a	7.2 a	3.34 b	0.426 a	1.885 ab
30 cm Trellis	11.64 a	29 a	126.9 b	25.0 a	6.6 b	3.44 a	0.423 a	1.891 a
60 cm Trellis	13.15 a	31 a	143.9 a	24.9 a	6.7 b	3.41 a	0.426 a	1.901 a

* Figures for parameters 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 3 (2003 - 2007).

Vine development	Canopy management	Alcohol	Extract	Sugar	Acid	pH	Wine colour	Wine colour	Total phenols
		(%)	(g/L)	(g/L)	(g/L)		420 nm	520 nm	(mg/L)
20 cm Bush vine	OC ¹	15.2 a*	33.7 a	1.34 ab	5.8 a	4.00 ab	0.845 a	1.357 a	2525 ab
	MC ²	15.1 a	33.4 ab	1.30 abc	5.7 a	3.94 ab	0.822 ab	1.306 ab	2163 ab
30 cm Bush vine	OC	15.1 a	33.5 ab	1.27 c	5.8 a	3.96 ab	0.798 ab	1.277 ab	2120 b
	MC	14.8 a	32.9 a	1.28 bc	5.7 a	3.97 ab	0.766 ab	1.216 b	2523 ab
30 cm Trellis	OC	14.9 a	32.0 b	1.32 abc	5.6 ab	3.97 ab	0.763 ab	1.205 b	2524 ab
	MC	15.0 a	32.6 ab	1.36 a	5.4 b	4.01 ab	0.776 ab	1.201 b	2523 ab
60 cm Trellis	OC	15.1 a	32.6 ab	1.36 a	5.5 ab	3.96 ab	0.787 ab	1.229 ab	2444 ab
	MC	14.9 a	31.6 b	1.31 abc	5.6 ab	3.91 b	0.749 b	1.197 b	2666 a

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

Vine development	Alcohol (%)	Extract (g/L)	Sugar (g/L)	Acid (g/L)	pH	Wine colour 420 nm	Wine colour 520 nm	Total phenols (mg/L)
20 cm Bush vine	15.1 a*	33.1 a	1.3 a	5.8 a	3.94 ab	0.838 a	1.329 a	2344 a
30 cm Bush vine	14.9 a	32.6 ab	1.3 a	5.8 a	3.90 ab	0.782 ab	1.246 ab	2200 a
30 cm Trellis	15.0 a	31.3 bc	1.3 a	5.5 b	3.97 a	0.753 b	1.203 b	2524 a
60 cm Trellis	15.0 a	31.1 c	1.3 a	5.6 ab	3.88 b	0.768 b	1.213 b	2555 a

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TABLE 4. The influence of canopy treatments, vine development and cordon height on the wine colour and quality of Pinotage wines in climate region 3 (2003 - 2007).

Tretment	Wine colour (%)						Overall wine quality (%)					
	2003	2004	2005	2006	2007	Gem.	2003	2004	2005	2006	2007	Gem.
20 cm Bush vine OC¹	86.0 a*	83.5 ab	84.9 a	89.9 a	87.1 a	86.3	60.6 ab	62.8 a	54.2 a	56.4 a	63.2 a	59.4
20 cm Bush vine MC²	83.5 ab	82.9ab	85.5 a	89.9 a	87.0 a	85.8	59.4 ab	61.6 a	54.8 a	61.4 a	64.8 a	60.4
30 cm Bush vine OC	83.2 ab	82.5 ab	86.1 a	87.9 abc	85.5 ab	85.0	61.7 ab	58.6 a	58.3 a	59.4 a	57.7 ab	59.1
30 cm Bush vine MC	81.0 ab	86.1 a	84.0 a	90.5 a	82.8 ab	84.9	64.6 a	61.8 a	55.8 a	58.0 a	52.4 b	58.5
30 cm Trellis OC	77.1 b	77.8 ab	86.5 a	83.2 d	82.6 ab	81.4	55.3 b	60.9 a	54.7 a	54.1 a	60.8 ab	57.2
30 cm Trellis MC	78.8 ab	77.6 b	85.4 a	88.7 abc	84.0 ab	82.9	64.2 a	55.7 a	59.7 a	58.8 a	60.7 ab	59.8
60 cm Trellis OC	79.1 ab	76.0 b	87.8 a	86.0 bcd	84.6 ab	82.7	54.7 b	56.5 a	60.2 a	57.6 a	66.0 a	60.1
60 cm Trellis MC	78.5 b	76.9 b	84.3 a	85.3 cd	75.8 b	80.2	57.1 ab	57.0 a	59.1 a	53.9 a	57.3 ab	56.9

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The coloured blocks indicate where significant differences occurred between the canopy management treatments of vine development treatments.

TABLE 5. The influence of vine development in climate region 3 on the wine colour and quality of 2003 - 2007 Pinotage wines.

Vine development	Wine colour (%)						Overall wine quality (%)					
	2003	2004	2005	2006	2007	Gem.	2003	2004	2005	2006	2007	Gem.
20 cm Bush vine	84.7 a*	84.0 a	85.6 a	90.3 a	87.1 a	86.3	60.0 ab	62.4 a	54.7 a	58.9 a	64.0 a	60.0
30 cm Bush vine	82.1 ab	84.3 a	84.4 a	89.2 ab	84.1 a	84.8	63.1 a	61.0 ab	57.0 a	58.7 a	55.0 b	59.0
30 cm Trellis	77.9 b	78.2 ab	85.4 a	86.5 bc	83.3 a	82.3	59.7 ab	58.8 ab	56.0 a	56.5 a	60.7 ab	58.3
60 cm Trellis	78.8 b	76.9 b	85.2 a	85.6 c	80.0 a	81.3	55.9 b	56.5 b	57.7 a	55.6 a	61.6 ab	57.5

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

The coloured blocks indicate where significant differences occurred between the canopy management treatments of vine development treatments.

TABLE 6. The influence of vine development on 6 and 24 month old 2004 Pinotage aroma and wine quality in climate region 3.

Vine development	Wine age	Colour (%)	Cherry (%)	Berry (%)	Plum (%)	Other (%)	Balance (%)	Overall quality (%)
20 cm Bush vine	6 mnths	84.0 a	27.5 a	52.0 a	33.7 a	21.3 a	60.9 a	62.4 a
	24 mnths	81.1 a	47.3 a	47.3 a	17.6 a	17.6 a	64.0 a	63.2 a
30 cm Bush vine	6 mnths	84.3 a	30.3 a	55.2 a	37.3 a	22.9 a	58.6 ab	61.0 ab
	24 mnths	78.2 a	45.0 a	45.0 a	21.9 a	14.7 a	60.6a	60.3 a
30 cm Trellis	6 mnths	78.2 ab	35.8 a	52.4 a	37.4 a	16.6 a	57.1 ab	58.8 ab
	24 mnths	78.2 a	43.7 a	43.8 a	14.7 a	21.9 a	59.0 a	57.6 a
60 cm Trellis	6 mnths	76.9 b	29.7 a	52.5 a	35.6 a	15.3 a	54.7 b	56.5 b
	24 mnths	76.8 a	44.8 a	44.8 a	16.4 a	16.4 a	57.4 a	56.5 a

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