

A Comparison of Vineland Apple Rootstocks and M.26 EMLA in the 1996 McIntosh Rootstock Trial

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In 1996, a trial was established at the University of Massachusetts Cold Spring Orchard Research & Education Center including Rogers Red McIntosh on V.1, V.2, V.3, V.4, V.7, and M.26 EMLA. The experiment was a randomized-complete-block design with seven replications. Means from 2005 (10th and final

growing season for this trial) and cumulative means are included in Table 1 and Figure 1. Please note that V.4 was eliminated from this trial due to excessive vigor.

At the end of 2005, the largest trees were on V.7 and V.2, and the smallest were on V.3 (Figure 1, Table

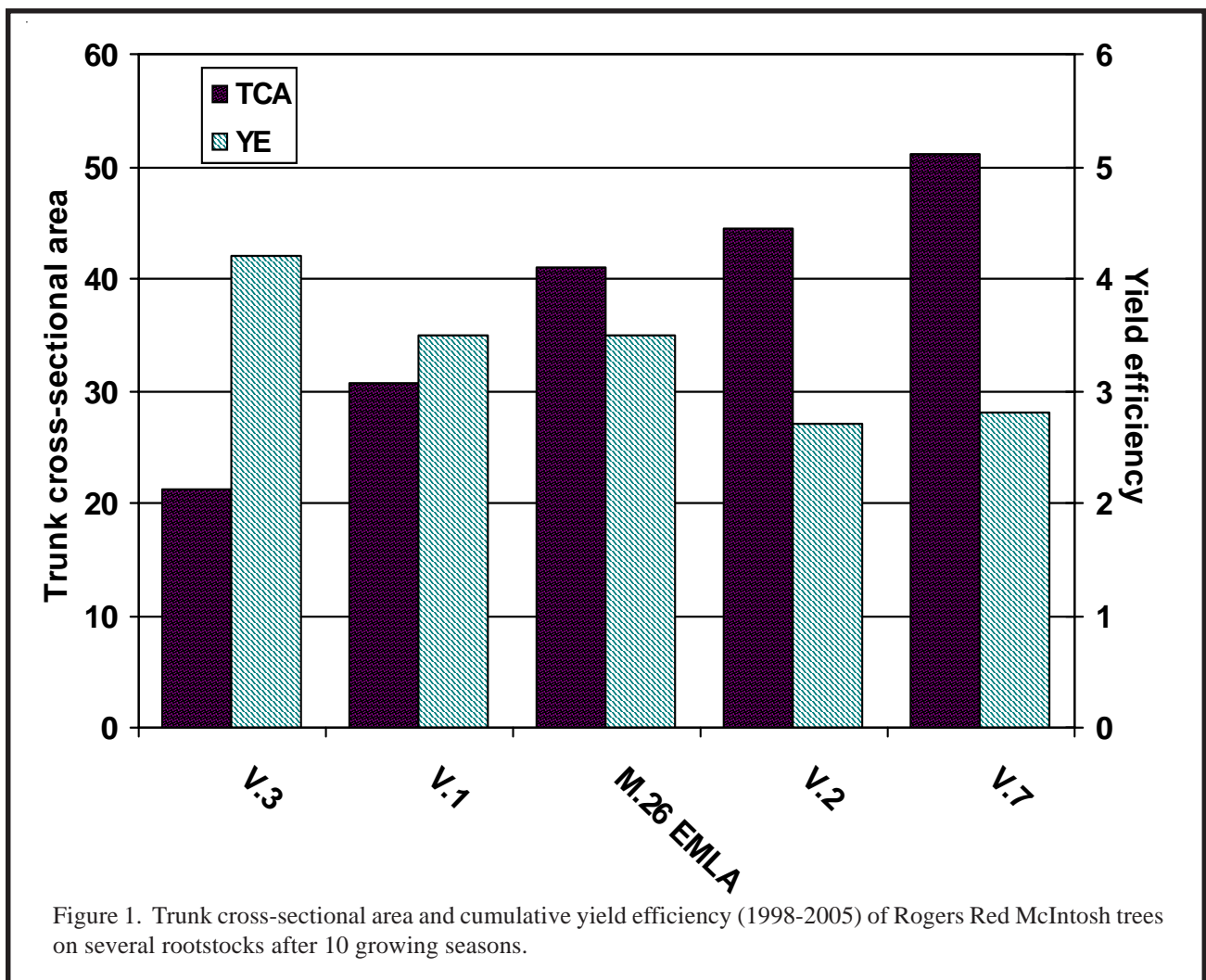


Table 1. Trunk cross-sectional area, yield, yield efficiency, and fruit weight in 2005 of Rogers Red McIntosh trees on several rootstocks planted in 1996.^z

Rootstock	Trunk cross-sectional area (cm ²)	Yield per tree (kg)		Yield efficiency (kg/cm ² TCA)		Fruit weight (g)	
		2005	Cumulative (1998-2005)	2005	Cumulative (1998-2005)	2005	Average (1998-2005)
V.1	30.7 bc	29.4 ab	105 ab	1.00 a	3.47 ab	136 a	132 ab
V.2	44.5 a	32.0 ab	123 ab	0.75 b	2.72 c	136 a	142 ab
V.3	21.2 c	22.0 b	84 b	1.03 a	4.15 a	132 a	128 b
V.7	51.1 a	40.1 a	139 ab	0.80 ab	2.76 bc	136 a	141 ab
M.26 EMLA	41.0 ab	42.0 a	142 a	1.03 a	3.49 ab	149 a	144 a

^z Means within columns not followed by the same letter are significantly different at odds of 19 to 1.

1). This represented a nearly two-fold difference in trunk cross-sectional area. Trees of M.26 EMLA and V.1 were statistically similar and intermediate between the groups.

Yield per tree in 2005 was greatest from trees on M.26 EMLA and V.7 and least from trees on V.3. V.1 and V.2 resulted in intermediate yields. Cumulatively (1998-2005), trees on M.26 EMLA yielded significantly more than those on V.3. Others were intermediate and not significantly different from either M.26 EMLA or V.3

Yield efficiency in 2005 Was greatest for trees on M.26 EMLA, V.3, and V.1 and least for trees on V.2. V.7 resulted in intermediate efficiency in 2005. Cu-

mulatively (1998-2005), V.3 resulted in the greatest efficiency, and V.2 the lowest. Other rootstocks resulted in intermediate efficiency.

Rootstock did not affect fruit weight in 2005, but on average (1998-2004), M.26 EMLA resulted in large fruit than did V.3. Other rootstocks resulted in intermediate fruit size.

The Vineland series of rootstock are from Vineland, Ontario and are reported to be winter hardy. This trial does not point to any outstanding rootstocks from this portion of the Vineland series. V.3, possibly, could be considered for further trial, since it produces a moderately dwarfed, reasonably yield efficient tree. The only potential concern was lower average fruit size.

