

1999 NC-140 Semidwarf Apple Rootstock Trial: CG.4814, CG.7707, G.30 and Supporter 4 versus M.26 EMLA and M.7 EMLA

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As part of the 1999 NC-140 Semidwarf Apple Rootstock Trial, a planting of McIntosh on six rootstocks was established at the University of Massachusetts Cold Spring Orchard Research & Education Center in 1999. The planting included six replications in a randomized-complete-block design. This trial was planted in several locations throughout the United States and Canada, but only Massachusetts data are reported here. Means from 2004 (6th growing season)

and cumulative means are included in Table 1 and Figure 1.

Largest trees were on G.30N, M.7 EMLA, and Supporter 4, and the smallest were on M.26 EMLA, CG.4814, and CG.7707 (Figure 1, Table 1). Greatest cumulative (1999-2004) root suckering was observed from trees on CG.4814 and M.7 EMLA. G.30N resulted in the most yield per tree in 2004 and cumulatively (2001-04), and M.26 EMLA resulted in the least.

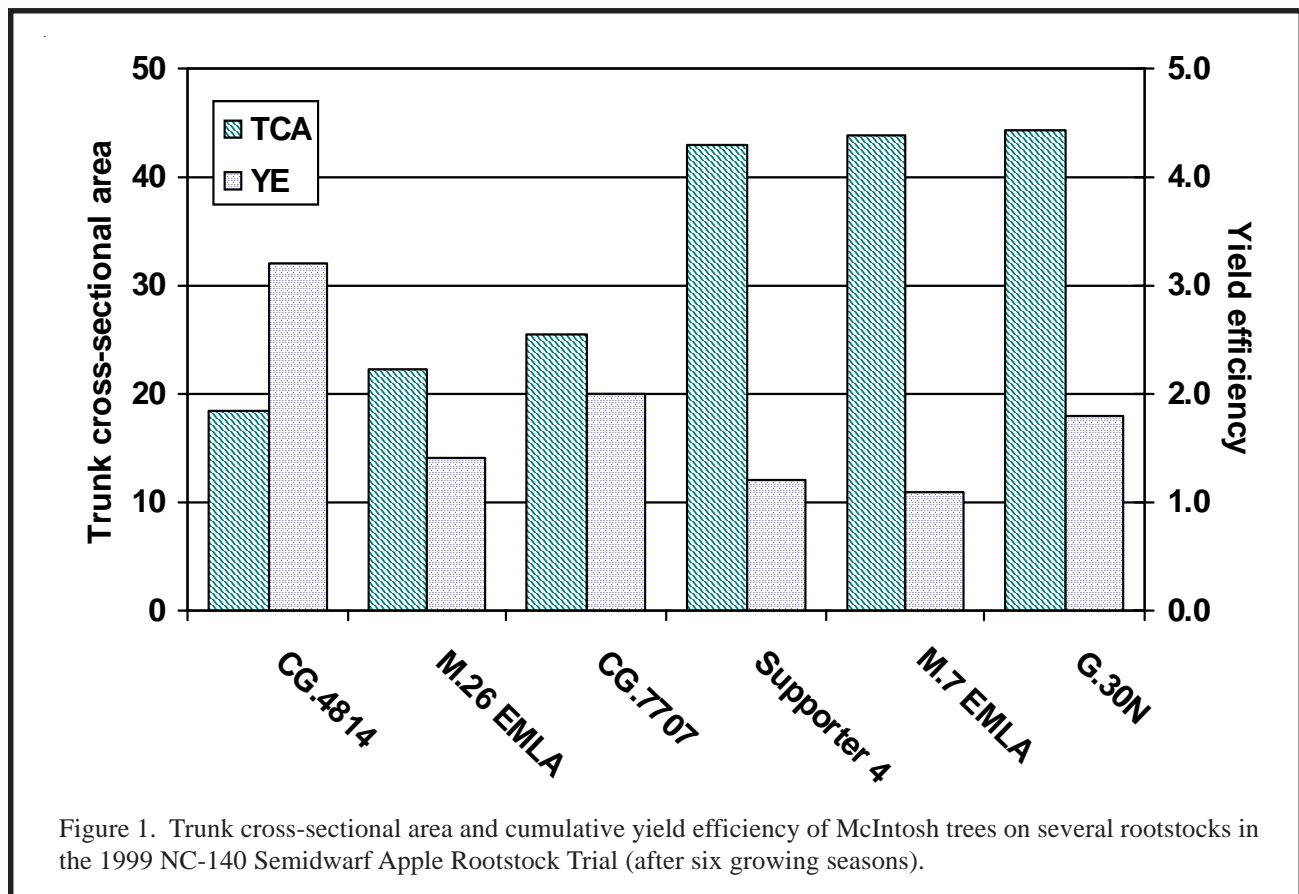


Table 1. Trunk cross-sectional area, suckering, yield, yield efficiency, and fruit weight in 2004 of McIntosh trees on several rootstocks in the Massachusetts planting of the 1999 NC-140 Semidwarf Apple Rootstock Trial.^z

Rootstock	Trunk cross-sectional area (cm ²)	Root suckers (no./tree, 1999-2004)	Yield per tree (kg)		Yield efficiency (kg/cm ² TCA)		Fruit weight (g)	
			2004	Cumulative (2001-04)	2004	Cumulative (2001-04)	2004	Average (2001-04)
CG.4814	18.5 b	13.0 ab	21.8 ab	59 ab	1.19 a	3.16 a	219 a	172 a
CG.7707	25.5 b	2.4 b	19.8 ab	50 bc	0.79 ab	1.96 b	201 a	186 a
G.30N	44.4 a	1.3 b	26.7 a	80 a	0.58 b	1.83 b	186 a	174 a
M.26 EMLA	22.2 b	0.0 b	12.4 b	31 c	0.55 b	1.41 b	202 a	179 a
M.7 EMLA	43.9 a	21.8 a	20.6 ab	50 bc	0.46 b	1.14 b	197 a	175 a
Supporter 4	43.0 a	2.2 b	15.2 ab	47 bc	0.37 b	1.15 b	199 a	176 a

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

Trees on CG.4814 were the most yield efficient in 2004 and cumulatively (2001-04) (Figure 1, Table 1). Those on CG.7707 and G.30N had numerically greater yield efficiency than trees on M.26 EMLA, M.7 EMLA, or Supporter 4, but additional years of data will be required to determine if the difference can become significant. Fruit weight was not affected by rootstock in

2004 or on average (2001-04).

G.30 likely is the rootstock of most interest in this trial. It produced a tree similar in size and greater yielding than those on M.7. Note should be made of CG.4814. It produced a large dwarf tree, similar in size to those on M.26, but yielding nearly double. The only drawback may be its propensity for root suckering.

