

G.16 versus M.9 in the 1998 NC-140 Apple Rootstock Trial

Wesley R. Autio, Jon M. Clements, and James Krupa

Department of Plant, Soil, & Insect Sciences, University of Massachusetts

As part of the 1998 NC-140 Apple Rootstock Trial, a planting of Gala on three rootstocks was established at the University of Massachusetts Cold Spring Orchard Research & Education Center in Belchertown in 1998. The experiment was a randomized-complete-block design with ten replications. This trial was planted at several locations throughout North America, but only Massachusetts data are reported here. Means

from 2005 (8th growing season) and cumulative means are included in Table 1 and Figure 1.

Rootstock significantly affected trunk cross-sectional area, with trees on G.16 significantly (more than 50%) larger than those on M.9 or M.9 EMLA (Figure 1, Table 1).

Trees did not produce many root suckers, and cumulative (1998-2005) root suckering was similar

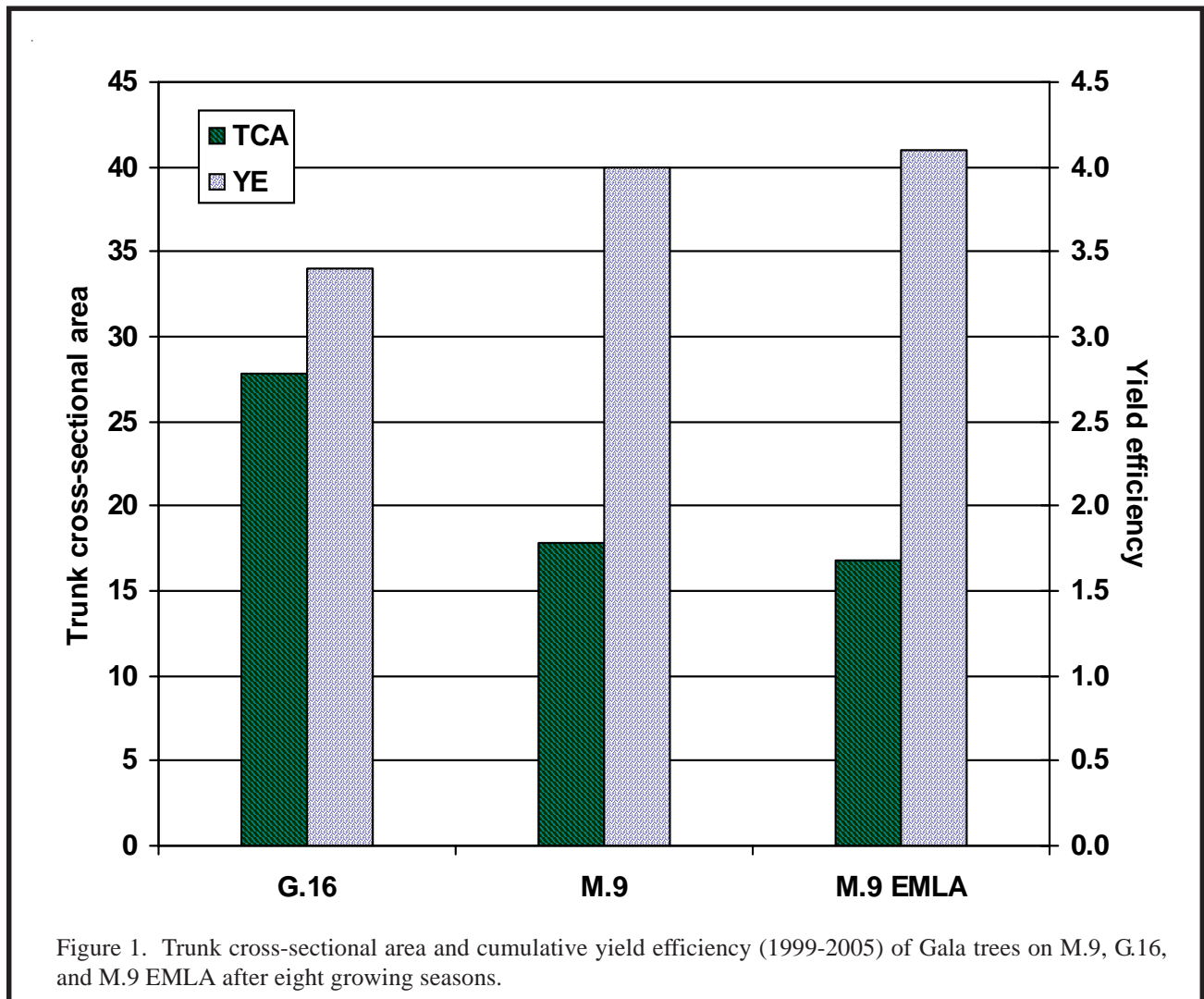


Table 1. Trunk cross-sectional area, suckering, yield, yield efficiency, and fruit weight in 2005 of Gala trees on various rootstocks in the Massachusetts planting of the 1998 NC-140 Apple Rootstock Trial.^z

Rootstock	Trunk cross-sectional area (cm ²)	Root suckers (no./tree, 1998-2005)	Yield per tree (kg)		Yield efficiency (kg/cm ² TCA)		Fruit weight (g)	
			2005	Cumulative (1999-2005)	2005	Cumulative (1999-2005)	2005	Average (1999-2005)
G.16	27.8 a	1.4 a	37.1 a	96 a	1.33 b	3.39 b	149 a	127 b
M.9	17.8 b	1.3 a	29.2 a	71 b	1.66 a	4.03 a	167 a	160 a
M.9 EMLA	16.8 b	1.0 a	31.0 a	70 b	1.77 a	4.13 a	157 a	156 a

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

among the three rootstocks (Table 1).

Yields per tree in 2005 were not different among trees on the three rootstocks (Table 1). Cumulatively (1999-2005), trees on G.16 yielded more than trees on either of the M.9 strains.

In 2005 and cumulatively (1999-2005), trees on the M.9 strains were more yield efficient than trees on G.16 (Figure 1, Table 1).

In 2005 and on average (1999-2005), G.16 resulted in significantly smaller fruit size than did M.9 or M.9

EMLA (Table 1).

As a new rootstock introduction from the Cornell-Geneva Apple Rootstock Breeding Program (a cooperative effort of Cornell University and the United States Department of Agriculture), primary interest is in how G.16 compares to M.9. This trial suggests that G.16 results in large dwarf trees, which are somewhat less yield efficient than M.9 and with smaller fruit size. Results from younger trials with other scion cultivars are also reported in this issue.

