CCTEC CORNELL CENTER FOR TECHNOLOGY ENTERPRISE AND COMMERCIALIZATION

GENEVA® APPLE ROOTSTOCKS COMPARISON CHART

Introduction:

The joint Cornell University and United States Department of Agriculture-Agricultural Research Service (USDA-ARS) Apple Rootstock Breeding and Evaluation Program develops new rootstock cultivars with an emphasis on productivity, yield efficiency, ease of nursery propagation, fire blight resistance, tolerance to extreme temperatures, resistance to the soil pathogens of the sub-temperate regions of the US, and tolerance to apple replant disorder.

In many trials in North America and other worldwide locations all of the released GENEVA® rootstocks have demonstrated a “per acre productivity” and “tree yield efficiency” similar or higher than current commercial standards M.9 and M.26.

General Characteristics of GENEVA® Apple Rootstocks

- Disease resistance
  - Fire blight
  - Crown and root rots (*Phytophthora*)
  - Replant disease complex*
- Pest resistance
  - Woolly apple aphid*
- Other characteristics
  - All are dwarf types that differ within dwarf sizes
  - Cold hardiness*

*Applies to some GENEVA® Apple Rootstocks.

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GENEVA® Apple Rootstocks

Traits	D1131 G.65	D1148 G.11	D1147 G.16	D3610 G.41	D4950 *New!* G.214	D3609 G.935	D2737 G.202	D4190 *New!* G.222	D3785 G.30	D3540 *New!* G.210	D5107 *New!* G.890	D4951 *New!* G.969
Arranged in order by size (smallest to largest)	M.27	M.9-T337	M.9 T337	M.9 T337	M.9/M.26	M.26	M.26	M.7/M.26	M.7	M.7	M.7	M.7 and MM.106
Woolly Apple Aphid Resistance	No	High	No	High	High	No	High	High	No	High	High	High
Fire Blight Resistance	Very Resistant	Resistant	Resistant	Very Resistant	Very Resistant	Very Resistant	Very Resistant	Very Resistant	Very Resistant	Very Resistant	Very Resistant	Very Resistant
Replant Disease Complex Resistance	TBD	No	Partial	Tolerant	Tolerant	Tolerant	Tolerant	No	Tolerant	Tolerant	Tolerant	Tolerant
Crown and Root Rots (Phytophthora)	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant	Tolerant
Cold Hardiness	Yes	Yes	Partial: Good Mid-winter, Bad early-cold	Yes	TBD	Yes	Yes-Good, Mid-winter	Yes	Yes	TBD	TBD	TBD
Productivity/Yield Efficiency- as good or better than M.9	TBD	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	TBD	TBD	TBD
Low suckering and burr knots	TBD	TBD	Yes	Yes	Yes	Yes	Yes	TBD	Yes	Yes	Yes	Yes

TBD: To Be Determined.
Licensing for all varieties is available as exclusive or non-exclusive in selected Domestic and International Territories.
Chart data valid as of December 9, 2011, and supplied by Cornell University apple rootstock breeding team members, Gennaro Fazio, PhD., Herb Aldwinckle, PhD., and Terence Robinson, PhD.

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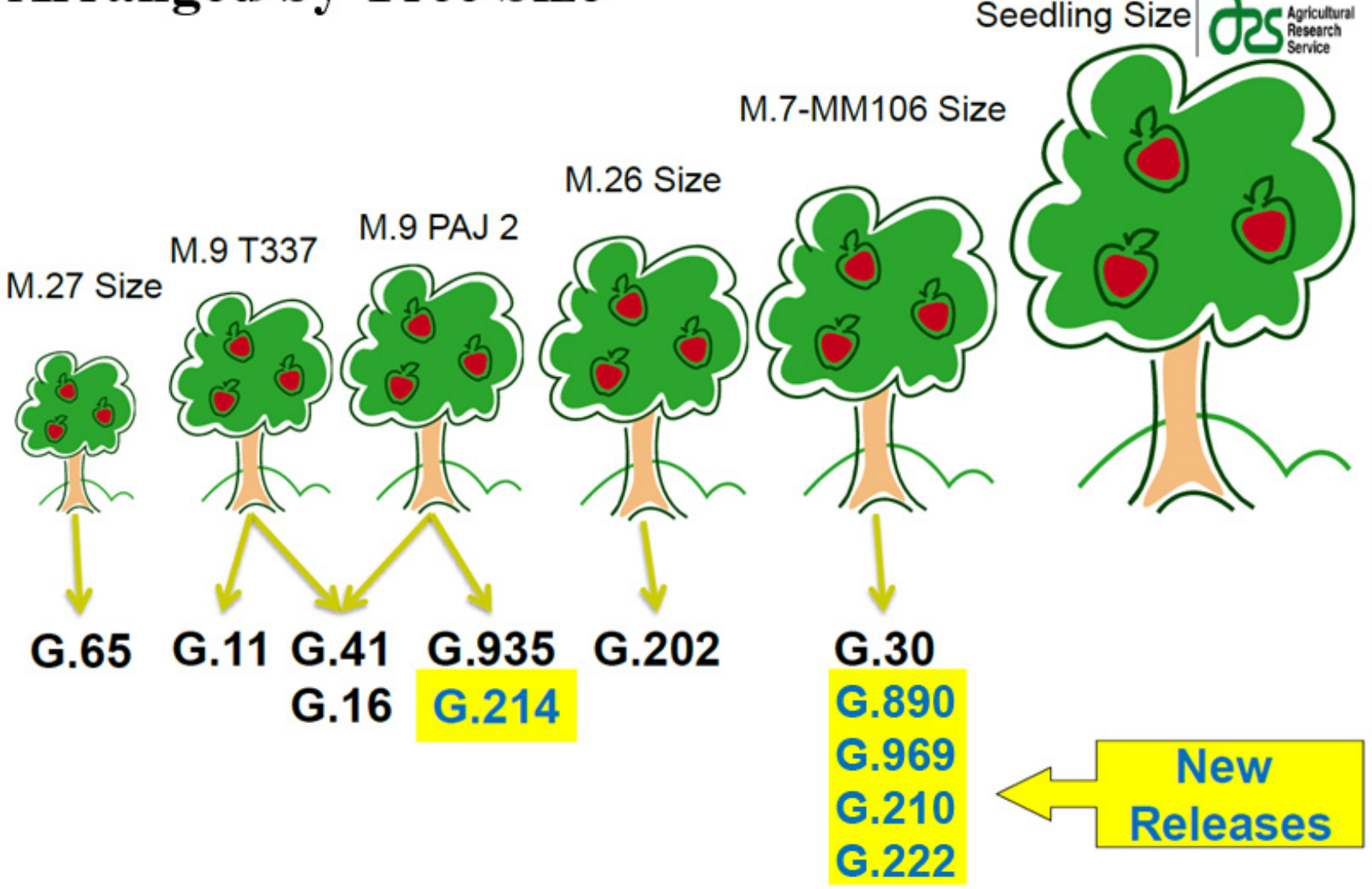
Released GENEVA® Apple Rootstocks Arranged by Tree Size



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