



Overview of the Vineland Series Apple Rootstocks

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Presentation Overview

Vineland Series Apple Rootstocks

- Description
- Attributes
- Availability

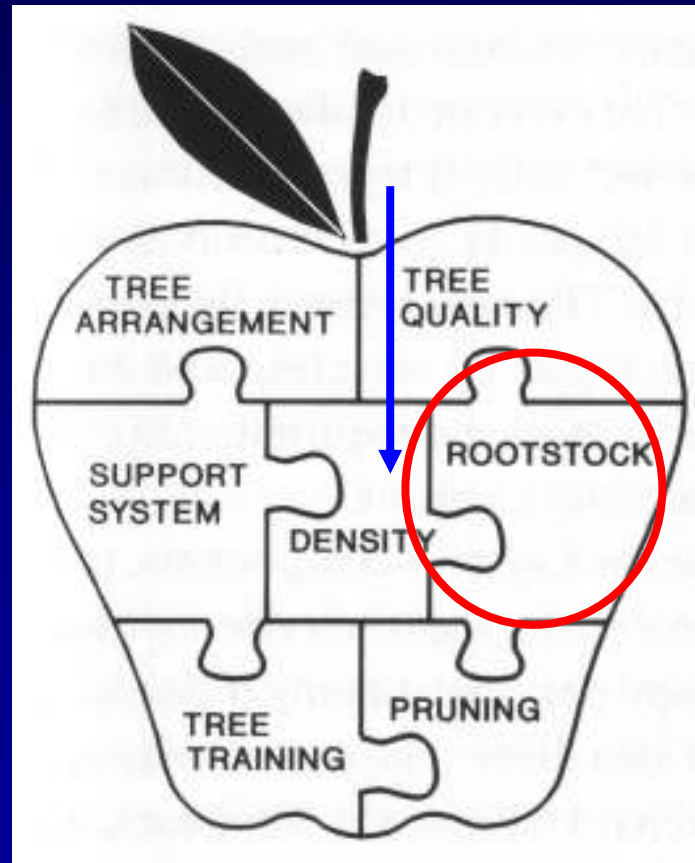
Rootstock differences can be subtle but significant



Precocity, productivity, size control, disease resistance, cold hardiness, replant tolerance

The Orchard System Puzzle

(Barritt, 1992)



FACTSHEET



ORDER NO. 90-607

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AN/EE/21/26

Ontario Ministry of Agriculture, Food and Rural Affairs

APPLE ROOTSTOCKS

K.B. Wilson

(Replaces Extension Apple Rootstock Order No. 90/11, and portions of Publication 534, *Rootstock for Fruit Trees*)

With land values and charges to all other farming uses making it impossible for apples to be produced economically and as early as in the investment he could. The use of appropriate apple rootstocks has greatly improved the economics of growing apples.

Apple trees are not grown on their own roots (a) (b) (c) (d) (e) (f) (g) (h) (i) (j) (k) (l) (m) (n) (o) (p) (q) (r) (s) (t) (u) (v) (w) (x) (y) (z) (aa) (ab) (ac) (ad) (ae) (af) (ag) (ah) (ai) (aj) (ak) (al) (am) (an) (ao) (ap) (aq) (ar) (as) (at) (au) (av) (aw) (ax) (ay) (az) (ba) (bb) (bc) (bd) (be) (bf) (bg) (bh) (bi) (bj) (bk) (bl) (bm) (bn) (bo) (bp) (bq) (br) (bs) (bt) (bu) (bv) (bw) (bx) (by) (bz) (ca) (cb) (cc) (cd) (ce) (cf) (cg) (ch) (ci) (cj) (ck) (cl) (cm) (cn) (co) (cp) (cq) (cr) (cs) (ct) (cu) (cv) (cw) (cx) (cy) (cz) (da) (db) (dc) (dd) (de) (df) (dg) (dh) (di) (dj) (dk) (dl) (dm) (dn) (do) (dp) (dq) (dr) (ds) (dt) (du) (dv) (dw) (dx) (dy) (dz) (ea) (eb) (ec) (ed) (ee) (ef) (eg) (eh) (ei) (ej) (ek) (el) (em) (en) (eo) (ep) (eq) (er) (es) (et) (eu) (ev) (ew) (ex) (ey) (ez) (fa) (fb) (fc) (fd) (fe) (ff) (fg) (fh) (fi) (fj) (fk) (fl) (fm) (fn) (fo) (fp) (fq) (fr) (fs) (ft) (fu) (fv) (fw) (fx) (fy) (fz) (ga) (gb) (gc) (gd) (ge) (gf) (gg) (gh) (gi) (gj) (gk) (gl) (gm) (gn) (go) (gp) (gq) (gr) (gs) (gt) (gu) (gv) (gw) (gx) (gy) (gz) (ha) (hb) (hc) (hd) (he) (hf) (hg) (hh) (hi) (hj) (hk) (hl) (hm) (hn) (ho) (hp) (hq) (hr) (hs) (ht) (hu) (hv) (hw) (hx) (hy) (hz) (ia) (ib) (ic) (id) (ie) (if) (ig) (ih) (ii) (ij) (ik) (il) (im) (in) (io) (ip) (iq) (ir) (is) (it) (iu) (iv) (iw) (ix) (iy) (iz) (ja) (jb) (jc) (jd) (je) (jf) (jg) (jh) (ji) (jj) (jk) (jl) (jm) (jn) (jo) (jp) (jq) (jr) (js) (jt) (ju) (jv) (jw) (jx) (jy) (jz) (ka) (kb) (kc) (kd) (ke) (kf) (kg) (kh) (ki) (kj) (kk) (kl) (km) (kn) (ko) (kp) (kq) (kr) (ks) (kt) (ku) (kv) (kw) (kx) (ky) (kz) (la) (lb) (lc) (ld) (le) (lf) (lg) (lh) (li) (lj) (lk) (ll) (lm) (ln) (lo) (lp) (lq) (lr) (ls) (lt) (lu) (lv) (lw) (lx) (ly) (lz) (ma) (mb) (mc) (md) (me) (mf) (mg) (mh) (mi) (mj) (mk) (ml) (mm) (mn) (mo) (mp) (mq) (mr) (ms) (mt) (mu) (mv) (mw) (mx) (my) (mz) (na) (nb) (nc) (nd) (ne) (nf) (ng) (nh) (ni) (nj) (nk) (nl) (nm) (nn) (no) (np) (nq) (nr) (ns) (nt) (nu) (nv) (nw) (nx) (ny) (nz) (oa) (ob) (oc) (od) (oe) (of) (og) (oh) (oi) (oj) (ok) (ol) (om) (on) (oo) (op) (oq) (or) (os) (ot) (ou) (ov) (ow) (ox) (oy) (oz) (pa) (pb) (pc) (pd) (pe) (pf) (pg) (ph) (pi) (pj) (pk) (pl) (pm) (pn) (po) (pp) (pq) (pr) (ps) (pt) (pu) (pv) (pw) (px) (py) (pz) (qa) (qb) (qc) (qd) (qe) (qf) (qg) (qh) (qi) (qj) (qk) (ql) (qm) (qn) (qo) (qp) (qq) (qr) (qs) (qt) (qu) (qv) (qw) (qx) (qy) (qz) (ra) (rb) (rc) (rd) (re) (rf) (rg) (rh) (ri) (rj) (rk) (rl) (rm) (rn) (ro) (rp) (rq) (rr) (rs) (rt) (ru) (rv) (rw) (rx) (ry) (rz) (sa) (sb) (sc) (sd) (se) (sf) (sg) (sh) (si) (sj) (sk) (sl) (sm) (sn) (so) (sp) (sq) (sr) (ss) (st) (su) (sv) (sw) (sx) (sy) (sz) (ta) (tb) (tc) (td) (te) (tf) (tg) (th) (ti) (tj) (tk) (tl) (tm) (tn) (to) (tp) (tq) (tr) (ts) (tt) (tu) (tv) (tw) (tx) (ty) (tz) (ua) (ub) (uc) (ud) (ue) (uf) (ug) (uh) (ui) (uj) (uk) (ul) (um) (un) (uo) (up) (uq) (ur) (us) (ut) (uu) (uv) (uw) (ux) (uy) (uz) (va) (vb) (vc) (vd) (ve) (vf) (vg) (vh) (vi) (vj) (vk) (vl) (vm) (vn) (vo) (vp) (vq) (vr) (vs) (vt) (vu) (vv) (vw) (vx) (vy) (vz) (wa) (wb) (wc) (wd) (we) (wf) (wg) (wh) (wi) (wj) (wk) (wl) (wm) (wn) (wo) (wp) (wq) (wr) (ws) (wt) (wu) (wv) (ww) (wx) (wy) (wz) (xa) (xb) (xc) (xd) (xe) (xf) (xg) (xh) (xi) (xj) (xk) (xl) (xm) (xn) (xo) (xp) (xq) (xr) (xs) (xt) (xu) (xv) (xw) (xx) (xy) (xz) (ya) (yb) (yc) (yd) (ye) (yf) (yg) (yh) (yi) (yj) (yk) (yl) (ym) (yn) (yo) (yp) (yq) (yr) (ys) (yt) (yu) (yv) (yw) (yx) (yy) (yz) (za) (zb) (zc) (zd) (ze) (zf) (zg) (zh) (zi) (zj) (zk) (zl) (zm) (zn) (zo) (zp) (zq) (zr) (zs) (zt) (zu) (zv) (zw) (zx) (zy) (zz)

Dwarf trees grow apples where most of the trees can be picked without ladders. To improve efficiency in the picking operation and to increase yield per hectare, dwarf to semi-dwarf trees are planted at close intervals in the rows. This type of high-density planting provides a continuous tree wall of bearing surface to be sprayed and picked, thus reducing waste of time and materials.

High-density plantings maximize light interception by the leaves of the trees rather than spreading in the number of trees per hectare. For maximum light interception to occur, a minimum amount of sunlight is lost on the ground between trees. It has been shown that tree size and total fruit production increases when light interception and utilization are increased. In general, the more dwarfing the rootstocks, the better they fare themselves in high-density planting, with early commercial returns.

Most of the rootstocks available for apples were not bred or selected for winter hardiness in Canada. Consequently, the trees or stems suffer cold injury occasionally in certain locations across Ontario. Avoid successive cultivations of bedding that produce late autumn growth. Soil cover with mulch under the trees provides protection for the roots against extremes of temperatures.

Depending on which rootstock is used, apple trees may be broadly classified into 4 categories: dwarf, semi-dwarf, semi-sprouting or semi-standard, and vigorous or standard size. These are relative terms. Tree size at any age will vary with the cultivar, the soil, nutrients, growing practices, amount of pruning, and climate.

The number of rootstocks available commercially for dwarfing apple trees is greatly increasing. Not all of these rootstocks are suitable for apple production in Ontario. Before selecting a rootstock be sure to research the options available. There are varying opinions on the performance of the different rootstock depending on the environment under which they have been evaluated. The rootstocks listed in this factsheet are the ones believed to have the most promise for Ontario growing conditions.

DWARF

These rootstocks have the added advantage of being very precocious with high yield efficiency. This allows growers to change cultivars as necessary without extended periods of loss production. The traditional concept that an orchard is a lifetime venture must be abandoned considering the economic pressures of today.

Since the fruiting canopy is so close to the ground with dwarf rootstocks, do not plant on sites where accumulation of cold air during frequent frost conditions during the spring/early each circumstances. Loss of a crop can lead to excessive regrowth and crowding, which may prove difficult to control. Where heavy snow accumulations occur, limbs of trees or dwarf rootstocks may be damaged or pulled from the trunk as the snow melts in spring.

Dwarfing rootstocks have a limited root volume and benefit from supplemental irrigation in dry seasons and in drought soils. Dwarfing rootstocks also benefit from total tree support for the life of the orchard.

Browse = Resources = World = Rural Ontario

Vineland Rootstocks



Orchard and Vineyard Show, Traverse City, MI – Jan 21-22, 2009



Description

- Developed by Dr. Alec Hutchinson
- 'Kerr' applecrab x 'M.9' rootstock
- Seven rootstocks in the series ('V.1', 'V.2'-'V.7')
- Tested in 1980 (Washington, Ohio)
- Tested in 1994-2003 (NC-140)
- Tested in Simcoe 1997, 2002
- Tested in Manitoba and Edmonton (1997-)

Excluded V.5
and V.6

Tree size and cumulative yield of 10-yr-old Gala on 20 rootstocks

