Register of New Fruit and Nut Varieties
Brooks and Olmo
List 35

Edited by James N. Cummins
Department of Horticultural Sciences, New York State Agricultural Experiment Station, Cornell University, Geneva, NY 14456

ADDENDA AND REVISIONS

APPLE

Nured® Jonathan (Improved Red Jonathan) - Synonym added; plant pat. 2650, 5 July 1966.
Paulared (Summer Mac). - Synonym added; plant pat. 2800, 12 Mar. 1968.
Stark® Blushing Golden™ (Griffith Gold) - Synonym added; plant pat. 2835, 1 Oct. 1968.

APRICOT


GRAPE


NENDARINE


PEACH


RASPBERRY


STRAWBERRY


ALMOND

ROOTSTOCKS FOR ALMONDS

J. N. Cummins and Tom Beckman

Ferciana - See Ishara®.
GF 8-1. - See under Peaches. Almond/GF 8-1 trees are of stature similar to almond/peach.
GF 677. - See under Peaches. Compatible with very broad range of almond varieties. Induces very rapid growth; trees within the planting are very uniform. Almond/GF 677 trees are very vigorous, uniform, and productive and tolerant of drought and calcareous soils.
Hansen 536. - Orig. in Davis, Calif. by C.J. Hansen, Dept. of Pomology, Univ. of Calif. Selected and introd. in 1986 by D.E. Kester and R.N. Asay. Almond B × Peach Selection 1-8-2; cross made in 1964; pollen parent has Prunus davidiana, Chinese peach PI 6582, and Okinawa in pedigree. Very vigorous clonal rootstock for almonds, peaches, and nectarines; also compatible with prunes and Japanese.
plums, but not with apricots. In California, propagated by hardwood cuttings taken in late fall and planted directly in the nursery row, where survival is slightly lower than that of Hansen 2168. Root system of mature tree is intermediate between almond seedling and peach; large branch roots, large mass of medium to small fibrous roots; more deeply rooted than Marianna 2624. Anchorage excellent. No suckers. Not coldhardy. Immune to root-knot nematodes; susceptible to root-lesion nematodes; tolerant to lute-induced chlorosis. Selected because of its slightly better tolerance of Phytophthora syringae than Hansen 2168, but has shown less field survival than peach. Relatively low chilling, about 400-500 h, similar to Nonpareil almond.

Hansen 2168. -Orig. in Davis, Calif. by C.J. Hansen, Dept. of Pomology, Univ. of California. Introd. in 1986 by D.E. Kester and R.N. Asay. Very vigorous rootstock for almonds, peaches, nectarines, and Japanese plums; not compatible with apricots. Almond B × Peach Selection 1-8-2; cross made in 1962; pollen parent has Prinus davidiana, Chinese peach PI 6582, and Okinawa in pedigree. Propagated by hardwood cuttings and by micropropagation. Root system of mature tree intermediate between almond seedling and peach; more deeply rooted than Marianna 2624. Anchorage excellent; no suckers. Not coldhardy. Resistant to root-knot nematodes; immune to both M. javanica and M. incognita acrita; susceptible to root-lesion nematodes; tolerant to lime-induced chlorosis. Slightly less tolerant of Phytophthora syringae than Hansen 536 in original tests. Relatively low chilling, about 400-500 h, similar to Nonpareil almond.

Ishhtara®. -See under Plums. Compatible under Ai, Ferragines, Ardechoise, and Ne Plus Ultra; no incompatibilities reported. Vigor similar to that of peach and GF 8-1. Excellent anchorage expedites shaking.

Myran®. -See under Peach Rootstocks. Compatible under all cultivars of almond tested. Very vigorous, similar to GF 677. Young almond trees on Myran show no symptoms of Verricillum wilt when planted in contaminated soil. More tolerant of root asphyxia than are peach × almond stocks.

APPLE

R. D. Way, Robert A. Norton, and J. N. Cummins


Acey Mac (Buhr McIntosh). -Orig. in Peru, N.Y., by Arthur Burrrill. Discovered before 1969. Assigned to Columbia Basin Nursery, Quincy, Wash. Fruit: very similar to McIntosh in appearance, flavor, shape, flesh color, and texture, but larger, firmer, and less inclined to preharvest drop. Ripens 5 days after Rogers McIntosh. Tree: similar to McIntosh.

Adina™ (Frankard, Stark® Adina™). -Orig. instant hope, Queensland, Australia, by H. Franklin. Plant pat. 6361, 1 Nov. 1988. Assigned to Stark Bro's Nursery, Louisiana, Mo. Fruit: large; color red to purplish red, occasional stripe; shape round conic; flesh creamy white, firm, very juicy; sweet, with distinctive hint of cinnamon; superior eating quality; harvest season very early, mid-June. Tree: vigorous; precocious; low chilling requirement (350 h); grows in Hardiness Zones 6 to 9; Dorsett Golden is a suitable pollinizer.

Applethorpe Earlidel. -See Earlidel.

Applethorpe Summerdel. -See Summerdel.

Arlet. -See Swiss Gourmet™.

Belchard®. -See Chantecler.

Bountiful (Marrin Bountiful). -Orig. in Kent, England, by F.H. Alston, East Malling Research Station. Introd. in 1986. Cox’s Orange Pippin (open-pollinated). Fruit: large, 75- to 80-mm diam.; skin green with occasional orange/red patches or stripes; acidity lower than Bramley; a culinary apple, cooks to give a deliciously flavored sauce; best-suited for home orchards. Ripens in late September; at 3.5C, stores inmarketable condition until January. Tree: compact, about half the size of Bramley trees; precocious; productive; little pruning required; few pollination problems.

Braeburn. -See Hillwell.

Britegold. -Orig. in Trenton, Ontario by L.P.S. Spangelo, S.J. Leuty, and H.B. Heeney, Agriculture Canada, Ottawa, and Smithfield Experimental Farm, Trenton, Ont. Introd. in 1980. Sandel (Delicious × Sandow) × Ottawa 522 [Platt Melba × R6T88 (Jonathan × [Rome Beauty × Malus floribunda 821 sib.])]. Tested as Ottawa 652. Fruit: medium to large; skin bright yellow; flesh cream-colored to yellow; slightly coarse, tender, juicy; flavor low acid; only medium quality; processed fruit rated good for slices and fair for sauce; harvest date just after McIntosh; storage life short, 1-2 months at 2C. Tree: low to medium vigor; spreading; tendency to droop; yields low; some tendency to become biennial; some of fruits drop before ripe; blooms 1 day after McIntosh; resistant to apple scab, very susceptible to cedar rust and quince rust.


Chick-A-Dee McIntosh. -Orig. in Monmouth, Maine, as a whole-tree spur-type mutation of Rogers McIntosh in the Chick Orchard. Patented in 1984; assigned to Roaring Brook Nurseries, Monmouth, Maine. Spur-type habit persisted after topgrafting onto seedling rootstocks in 1980. Fruit: indistinguishable from McIntosh. Tree: compact, very spurry growth habit; crotch angles wider than Rogers McIntosh; very slow growing; has little or no need for pruning due to horizontal branching; original tree about half the size of adjacent Rogers McIntosh trees of the same age.

Cooper Granny Smith. -See Earlee Granny.

Coromandel Red. -Disc. in 1972 in New Zealand as a chance seedling of unknown parentage by R. Knottenbelt on the Coromandel Peninsula. U.S. plant pat. applied for. Assigned to Carlson Plants, Dayton, Ore. Fruit: medium; 60% to 80% solid cherry red; flesh white, nonbrowning, very firm, crisp, juicy, flavor mildly subacid; starchy at harvest time; afterripening, quality very good; harvest 3-4 days before Granny Smith; promising late dessert apple. Tree: vigor moderate; spreading; heavy cropper; annual bearer; little or no preharvest drop; flowers late.


Dayton. -Orig. in Urbana, Ill., by the Purdue, Rutgers, and Illinois (PRI) cooperative breeding program. Introd. in 1987 by S.S. Korban, J. Janick, E.B. Williams, and F.H. Emerson. Plant pat. 5584, 3 Dec. 1985. Assigned to Newark Nurseries, Hartford, Mich. NJ 123249 × PRI1235-100; cross made in 1967. Pedigree includes Melba, Red Rome, Jonathan, Wealthy, Starr, Rome Beauty, and Malus floribunda 821. Selected in 1976; tested as Co-op 21; named in honor of retired breeder, D.F. Dayton. Fruit: medium-large, 75 mm diam.; roundish to slightly oblate; 90% of surface bright medium red; smooth, very glossy and attractive; flesh pale yellow, fine-grained, firm, crisp, juicy; flavor mildly subacid; quality very good; a summer dessert apple ripening 4 weeks before Delicious; in 1C storage retains quality up to 4 weeks. Tree: moderately upright and vigorous; field immune to apple scab; moderately resistant to powdery mildew and fire blight; fruits hang on the tree 2 weeks after ripe without losing firmness or dessert quality.

Dulcet. -Disc. by L. James Bailey, Wenatchee, Wash., about 1975; introd. in 1988; plant pat. applied for; assigned to Van Well Nursery. Parentage unknown. Fruit: medium, 70-75 mm; skin deep red with faint stripe and pronounced lenticels; shape round-conic; flesh creamy white, firm, crisp; flavor mildly sweet and aromatic; harvest date early September, 4 weeks before Delicious. Tree: vigorous, precocious, annual bearer; appears to be resistant to powdery mildew.

Earlee Granny™ (Early Granny, Cooper Granny Smith). -Orig. near Brewster, Wash. by C.L. Cooper. Discovered as whole tree sport
of Granny Smith in 1979. Introd. in 1986. Plant pat. 5761, 8 July 1986; assigned to TRECO®, Woodburn, Ore. Fruit: ripens 7-14 days before Granny Smith; requires 165 frost-free days to mature. Tree: more compact than Granny Smith. Similar to Granny Smith in other particulars.


**Earlidel (Applethorpe Earlidel).** - Orig. at Applethorpe, Queensland, Australia, by Granite Belt Horticultural Research Station. Released in 1988. Delicious × Early McIntosh. Tested as 35-155 and GB 155. Fruit: medium, 60-70 mm; skin 90% to 100% cherry red with darker red overstripes; round to slightly conical, flesh creamy white, firm, medium texture; subacid, sweet, pleasant flavor. Ripens 2 weeks before Gravenstein, 4-6 weeks before Delicious; shelf life about 10 days. Tree: more vigorous than Delicious; precocious; regular bearing; flowers early, with Granny Smith.

**Early Granny.** - See Earlact Granny; see Goldsmith.

**Early Spur Rome.** - A bud mutation of Lawspur Rome, discovered by Wilfred Berger, Quincy, Wash. Plant pat. 7328, 18 Sept. 1990; assigned to &CØ Nursery, Wemanetche, Wash. Fruit: color deep red by mid-August, just as Lawspur Rome is beginning to color; flavor of Rome Beauty; handles and stores well; does not bruise easily. Tree: spur habit of growth.

**Elan.** - Orig. from breeding program at Inst. for Horticultural Plant Breeding, Wageningen, Netherlands. Introd. in 1984; plant breedersrights granted 20 Nov. 1989. Golden Delicious × James Grieve. Fruit: most resembles Elstar, but larger, redder, smoother-skinned, and less acid; round conical; flesh medium firm, fine-grained. Harvest with 5 days after Elstar, requiring two or more pickings; short shelf life; can be stored only for a few weeks. Tree: medium vigor; precocious; tip bearing; very productive; regular bearing; upright spreading.


**Elstar (Lustre Elstar™).** - Orig. in Wageningen, Netherlands, by T. Visser, Inst. for Horticultural Plant Breeding. Introd. in 1972. U.S. plantpat. 6450, 6 Dec. 1988; assigned to Carlton Plants, Dayton, Ore. Golden Delicious × Ingrid Marie; cross made in 1955. Fruit: medium to large, axially diam. 60-70 mm, transverse diam. 70-80 mm; shape round-conic; good color, yellow with very attractive orange-red stripe; more susceptible to sunburn than Gala; performs best in cool districts; flesh firm, white, rather coarse; very good flavor but acid at harvest time; harvest date 3.5 weeks before Golden Delicious; requires 2 weeks storage to develop acceptable flavor. Tree: very vigorous; precocious cropping; less productive than Gala, with some tendency to biennial cropping; no preharvest drop; diploid, produces viable pollen; foliage not shed until January. More susceptible to powdery mildew than Granny Smith and Jonagold; scab susceptible; fruit viability susceptible to *Phytophthora rot.*

**Empress.** - Orig. in Geneva, N.Y., by R.D. Way, K.G. Livermore, and R.C. Lamb, New York State Agr. Expt. Sta., Cornell Univ., and by L.F. Hough, Rutgers Univ, New Brunswick, N.J. Introd. in 1988. Plant patent applied for. Jonamac × Vista Bella; cross made in 1969; selected in 1977; tested as NY 651. Named for its similarity in size, appearance, and quality to Empire, but ripens 6 weeks earlier. Fruit: medium, mostly about 60-65 mm diam.; shape round and symmetrical; color attractive, nearly totally blushed red and without stripes; skin covered with a heavy waxy bloom; flesh light yellow; texture semi-firm; flavor subacid, with a pleasing aroma: a late summer apple, ripens 6 weeks before Delicious; at -0.5C stores 1 month. Tree: only 70% as large as many very vigorous varieties; easy to manage in the orchard; heavily cropping; annual bearing; no known resistances to diseases and insects. Bloom: late midseason, between Delicious and Golden Delicious; diploid, produces viable pollen.

**Fall Red.** - Orig. in Morden, Manitoba, from cross made by CR. Ore. Selected at Univ. of Alberta; introd. by Prairie Fruit Breeding Coop. Committee. Duchess of Oldenburg × Haralson. Fruit: medium-large, 70-80 mm diam.; oblong-round; skin dull red on yellow-green ground color; flesh white, medium-high acidity, good flavor. Harvest mid-September in the southern prairies of Canada; stores well. Fruit quality suitable for juice as well as dessert. Tree: vigor moderate; tendency to biennial bearing. Moderately susceptible to fire blight, but recovers quickly. Hardy to zone 2A.

**Falstaff.** - Orig. in East Malling, Kent, England, by F.H. Alston. Introd. in 1989. James Grieve × Golden Delicious. Owned by Plant Breeding International. Fruit: medium, 65-75 mm; skin red stripes on yellow-green background, smooth; flesh crisp, juicy; good sugar/acid balance, very good flavor. Most resembles Jonagold, but smaller size. Matures 2 weeks after Cox’s Grange Pippin. Fruit stores well in refrigerated storage. Tree: medium vigor; drooping habit, with many drooping leaves presenting lower surfaces to the light; very productive. Diploid; spur flowers open 3 days before Cox’s Grange Pippin, many flowers on 1-year-old wood.

**Fiesta™ (Malling Fiesta).** - Orig. in East Malling, Kent, England, by F.H. Alston, J.R. Stow, J.W. Palmer, L.H. Clark, R.F.V. Williams, and H.F. Ermen, East Malling Research Station. Introd. in 1986. Cox’s Orange Pippin × Idared, crossed in 1971; selected in 1979. U.S. plant pat. applied for; assigned to TRECO®, Woodburn, Ore. Fruit: attractive but somewhat dull red blush and stripes on a yellow/green background; round and slightly flattened; texture very crisp and juicy; flavor pleasantly aromatic, similar to Cox’s Orange Pippin, harvest in mid-September with Cox’s Grange Pippin; at 1C common storage, stores until April; at 3.5C in controlled atmosphere storage it kept crisp and juicy until May; resistant to most storage disorders. Tree: moderately vigorous, larger than Cox; wide branch angles, drooping growth habit; productive, yield is double that of Cox; thinning is necessary; fruit hangs well after it ripens. Blooms 2 days later than Cox; styles are very receptive, even at low temperatures; slightly self-fertile; diploid, pollen viable.

**Flanagan Delicious.** - See Starkspur Ultra Red Delicious.

**Florina (Querina®).** - Orig. in Beaucouze, France, by Y. Lespinasse, J.M. Oliver, J. Lespinasse, and M. Le Lezec, Station d’Arboriculture Frutiere, INRA. Patented in France. Made available to French growers in 1977. 612-114-126(Golden Delicious × P226829-2-2) × Simpson’s Giant Starking] × Jonathan. Assigned to Agri Obtentions, 78283 Guyancourt, France. Fruit: most nearly resembles Empire; medium to large; color 3/4 purplish red on yellow background, shiny waxy bloom, very attractive, truncate conical; flesh cream colored; medium firm, resistant to bruising; rather sweet, very good eating quality; open calyx; harvest 2 weeks later than Golden Delicious; stores well, market season November to February. Tree: medium to strong vigor; early bearing; productive; harvest is easy; resistant to apple scab (*V. gene*), moderately susceptible to powdery mildew, and tolerant to rosy apple aphid and to fire blight.

**Frankard.** - See Adina™.

**Fulford Gala™.** - See Regal Gala.

**Gala Must.** - See Regal Gala.

**Galagolden.** - See Elbee.

**Galaxy.** - Orig. in Havelock North, Hawkes Bay, New Zealand, by K.W. Kiddle. Introd. in 1988. U.S. plant pat. 6955; 1 Aug. 1989; assigned to Stark Bro’s Nurseries, Louisiana, Mo. Limb mutation of Tenroy Gala™, which is a mutation of Kidd’s D-8 Gala™. Disc. in 1985 as a single mutated spur. Fruit: solid cherry red color over the entire surface with frequent, indistinct darker red overstripes. Color develops earlier than Tenroy Gala™. Galaxy is the same as Gala™ in the following characteristics: tree vigor, blossom period, crop yield, disease resistance, and fruit shape, size, and taste.

**Gavin.** - Orig. in Bayfordbury, England, by the breeding program at the John Innes Inst. DA 20-2 × Merton Worcester. Named in honor of A. Gavin Brown. Fruit: medium, 60-65 mm in diam.; color red flush on yellow-green ground; shape oblong; flesh yellow, crisp, juicy; flavor sweet. Tree: less productive than Cox’s Grange Pippin; immune to apple scab, *V. gene* resistance genes.

Gloster (Gloster 69).—Orig. in the breeding program, Jerk Fruit Res. Sta., Jerk, Germany.Introduced in 1969. Glockenapfel × Richarded Delicious. Fruit: similar to Delicious; large, 70-75 mm in diam.; color and shape similar to Richarded Delicious; flesh greenish-yellow, no bitter pit; sweet-tart flavor, more acid than Delicious, fair quality; harvest late with Golden Delicious and Jonagold; calyx open, subject to moldy core; long storage life. Tree: vigorous, upright; precocious; very heavy, annual cropping, more productive than Delicious; moderate preharvest drop.

Gold-N-Rose.—See Marigold.

Golden Supreme™.—Discovered in the orchards of Walter Krause, Reedley, Calif. Tested asWK-181. Assigned to Hilltop Trees, Hartford, Mich., and to Willow Drive Nursery, Ephrata, Wash. Fruit: medium to large; similar to Golden Delicious; yellow with pink blush on exposed fruits; texture fine to medium; firm; resistant; harvest late, with Golden Delicious and Jonagold; long storage life. Tree: vigorous, upright; less tendency to overcrop; susceptible to powdery mildew. Harvest 10-12 days earlier than Golden Delicious; ripens unevenly, two pickings required, storage life up to 4 months without shrivel. Tree: vigorous, nonspur.

Goldenir (Lysgolden ®).—Orig. at Angers, France, by Natl. Inst. Agr. Res. A radiation mutant of Golden Delicious; selected by L. Decourtye.Introduced in 1977; assigned to Agri Obtentions, Guyancourt, France. Trademarked in the United States by Hilltop Trees, Hartford, Mich. Fruit: most resembles Golden Delicious; medium, strong yellow color, sometimes with red blush; conical, tiptier than Golden Delicious; little or no russet; skin tougher, smoother, waxier than Golden Delicious; flesh and flavor same as Golden Delicious. Better resistance to bruising than Golden Delicious. Harvest 10-15 days after Golden Delicious; longer storage life. Tree: more vigorous than Golden Delicious; growth habit more leggy, with some bare wood; less productive; less tendency to overcrop; susceptible to powdery mildew.

Goldsmith (Early Granny, Summer Granny) .—Orig. in Elgin, South Africa. Introduced in 1975. Thought to be chance seedling of Granny Smith × Golden Delicious. Fruit: similar to Granny Smith, except ripens 2 weeks earlier; large; conical; skin color green to buff yellow; texture fine, firm; flesh color cream; quality fair; storage life 6-8 months, somewhat shorter than Granny Smith. Tree very vigorous, very precocious; bloom late.

Greensleeves (Malling Greensleeves).—Orig. in East Malling, Kent, England, by F.H. Alston, R. Watkins, and J.W. Bates, East Malling Research Station. Introduced in 1977. Protected by Plant Breeders’ Rights. James Grieve × Golden Delicious; seed germinated in 1966; tested as A 1206. Fruit: medium, 65 mm+, skin yellow-green with a trace of russet in the stem cavity; juicy; flavor is pleasantly subacid; ripens in early midseason. Tree semi-dwarf, ideal for high-density orchards; very precocious; productive (yielded 100% more fruit than Cox’s Orange Pippin in the first four fruiting years); when stored at 3.5°C, fruit is marketable until early December; flowers profusely 1 week before Cox’s Orange Pippin, long flowering period, flowers showed some resistance to severe frosts.

Haralded (Lantz; Haralson, Red Haralson).—Orig. in La Crescent, Minn., by Louis Lantz. A red-fruited mutation of Haralson. Plant pat. 4824,16 Feb. 1982; assigned to TREC®, Woodburn, Ore. Fruit: redder, earlier, sweeter than Haralson; early coloring without russet; sweet juicy; good storage. Tree same as Haralson.

Hatsuki.—Orig. at Morioka, Iwate, Japan, by Y. Yoshida, S. Tsuchiya, T. Haniuda, T. Sanada, and S. Sadamori, Morioka Branch, Fruit Tree Research Station. Introduced in 1976. Jonathan × Golden Delicious; cross made in 1939; selected in 1967. Tested as Tohoku #8. Fruit: medium to large, 250-300 g; short round-conical to oblong conical, slightly uneven in shape, skin light rose-red on yellow ground, rather thick, dull finish, numerous small russet dots; some rough russet in and around basin; flesh yellowish white, crisp, rather coarse, very juicy, slightly acid similar to Jonagold. Dessert quality excellent. Harvest with Gala, 17 days before Delicious. Tree: vigorous; spreading; regularly productive. Diploid; blossoms with Delicious.

Hidala.—See Hillwell.

Hillwell (RedBraeburn, Hidala).—Orig. at Hastings, New Zealand, by Mr. and Mrs. John Hill. Discovered as a limb mutation of Braeburn in 1981. Introduced in 1990. Plant pat. applied for; assigned to TREC®, Woodburn, Ore. Identical with Braeburn, except the apples of Hillwell are much redder.

Himekami.—Orig. at Morioka, Iwate, Japan, by Y. Yoshida, T. Haniuda, S. Tsuchiya, T. Sanada, T. Masuda, H. Bessho, and S. Sadamori, Morioka Branch, Fruit Tree Research Station. Introduced in 1984. Fuji × Jonathan; cross made in 1963; selected in 1976; tested as Morioka #37. Japanese Reg. No.P931, 18 July 1985. Fruit medium to large, 250-300 g; shape oblong to oblong-conic; skin bright red over yellow-green ground, smooth, some russet in cavity; flesh cream-colored, juicy, sweet, water core; good sugar/acid balance; good dessert flavor. Harvest early September in Washington cold storage 2 months; shelf life 4-5 weeks. Tree vigorous; upright; precocious; regularly productive. Diploid; blooms with Delicious.

Hokuto (Northern Star).—Orig. in 1983 from the breeding program at the Aomori Apple Expt. Sta., Kuroishi, Aomori Prefecture, Japan. Fuji × Mutsu. Japanese Reg. No. P 368. Fruit: medium, 200-250 g; shape round; color purplish-red stripe over yellow ground flesh cream-colored, dense; sweet with moderate acidity, excellent quality; harvest late, with Mutsu; long storage, but susceptible to moldy core.

Honeycrisp.—Orig. near Excelsior, Minn., by breeders of Univ. of Minn. Hort. Research Center. Introduced in 1991. Macoun × Honeygold; selected in 1974; tested as Minn. 1711. Plant pat. applied for; assigned to TREC®, Woodburn, Ore. Fruit: medium, 60-70 mm diameter without thinning; oblate to roundly oblate; skin 50% to 90% blotted scarlet over lemon yellow, dull finish, dimpled; numerous small, conspicuous lenticels; flesh cream-colored, coarse, very crisp, juicy; flavor mildly aromatic, subacid excellent dessert quality. Optimum harvest 5 days after McIntosh, but can be picked 10 days earlier or later; fruit tends not to drop; 5 months storage at 1°C. Tree: moderately vigorous; upright-spreading; regular bearing; hardy in northern Minnesota.


Jester (Malling Jester).—Orig. in East Malling, Kent, England, by F.H. Alston, East Malling Research Station. Introduced in 1981. Worcester Pearmain × Starkspur Golden Delicious. Fruit medium, 65-70 mm; color distinctive bright red, predominantly red on a yellow/green background; skin finish good, skin texture good flesh crisp and juicy; quality good; best suited for home orchards; ripe in early October; storage life short. Tree: regular, heavy cropping; precocious; compact growth habit; requires little pruning; flowers 2 days after Cox’s Orange Pippin; styles and pollen resistant to low temperatures (5C).

cestry includes Jonathan, Gallia Beauty, Red Spy, Golden Delicious, Rome Beauty, and *M. floribunda* 821. Selected in 1972; tested as Co-op 22. Fruit: medium, axial diam. 55-70 mm, transverse diam. 63-76 mm; roundish to slightly oblate; color 95% medium red without stripes; undercolor yellow-green; smooth with dry wax, generally no russet, glossy, attractive; appearance resembles Jonathan; flesh light yellow, fine-grained, crisp; flavor subacid, moderately rich, pleasant aroma, very good dessert apple. Season: with Jonathan. Storage: at 1°C retains flavor 10 weeks, no Jonathan spot, no shrivel in storage. Tree: semi-spreading, vigorous, nonspur type; field immunity to apple scab; slightly susceptible to powdery mildew and fire blight.

**Jonagold.** -Orig. at Halen, Belgium, by J. Morren. Introd. in 1985. U.S. plant pat. 5937. Limb sport of Jonagold. Color tends to be brownish during a 3-week period before harvest, but the brown coloring changes to an attractive solid red at harvest. Characteristics otherwise identical with Jonagold.

**Jored (King Jonagold).** -Orig. in St. Truiden, Belgium, by Johann Nicholai. Discovered in 1985 as a whole-tree red-fruited mutation of Jonagold with 80% to 90% red blush color. Plant pat. applied for; assigned to TRECO®, Woodburn, Ore.

**Jupiter (Malling Jupiter).** -Orig. in East Malling, Kent, England, by F.H. Alston in the breeding program at the East Malling Res. Sta. Introd. in 1981. Protected by Plant Breeders’ Rights; owned by Plant Breeding International, Cambridge. Cox’s Grange Pippin × Starking Delicious. Seed germinated in 1966. Tested as A 133/8. Fruit: large, 75 mm; attractive, well-colored orange-red blush and stripes on a greenish-yellow ground (similar to Cox’s Grange Pippin) with a smooth skin finish; some cracking around calyx; round to conic; flesh white, fine texture, juicy; flavor somewhat similar to Cox’s Grange Pippin, but only fair quality; in 1.5°C storage, susceptible to low-temperature breakdown, scald, and bitter pit, but remains firm until April in controlled atmosphere storage. Tree: vigorous with wide branch angles, trees 50% larger than Cox’s Grange Pippin; productivity; moderately resistant to scab, and bitter pit; bloom season late May to early June; good storage life; good pollenizer; trees have few insect or disease problems in Nova Scotia, but not tested for actual resistances.

**Kemp Delicious.** -See Topspur Delicious.

**Kent (Malling Kent).** -Orig. in East Malling, Kent, England, by H.M. Tydeman, East Malling Research Station. Introd. in 1974. Protected by Plant Breeders’ Rights; owned by Plant Breeding International, Cambridge. Cox’s Grange Pippin × Jonathan. Tested from 1964 to 1974 as A 1379. Fruit: medium, most fruits 60 mm diam. or larger; 75% skin surface dark coppery red on a green ground, occasionally extensive russet; shape slightly conic; texture firm; flavor very acid; late ripening; in 1.7°C storage keeps well until mid-April. Tree: medium size; upright; precocious cropping; little preharvest drop; blooms with Cox’s Grange Pippin and Golden Delicious. This is not the same variety as the Kent described in the Register of New Fruit & Nut Varieties 2nd ed., 1972.

**Kestrel.** -Orig. by breeding program at Res. Sta., Agriculture Canada, Kentville, Nova Scotia; cross made by C.J. Bishop in 1950, selected by R.P. Langley in 1961, introd. in 1975 by A.D. Crowe, New York Red Spy × Macoun. Tested as C13-30-88. Fruit: medium, 55-75 mm; shape round-conic, oblate; color almost completely washed or lightly striped with carmine to deep currant red on a pale greenish-yellow background; attractive; flesh creamy white, crisp, fine, juicy, exceptionally good texture; flavor subacid, mildly aromatic; eating quality very good to best; harvest time midseason, a few days after McIntosh; retains quality in storage; good shelf life. Tree: moderately vigorous, well-spurred, upright-spreading; annually productive. Has not had insect or disease problems in Nova Scotia, but not tested for actual resistances.

**King Jonagold.** -See Jored.


**Kogetsu.** -Orig. in Nambu-machi, Aomori, Japan by S. Tanuchii. Introd. in 1981. Golden Delicious × Jonathan. Japanese Reg. No. P.130. Fruit: medium-large, 300-350 g; round; skin 95% red; flesh creamy white, with good sugar/acid balance; excellent flavor, some drop. Harvest with Gala; stores well.

**Korona.** -Orig. at Kentville, Nova Scotia. Introd. in 1987. 34-91-13 (Mother × Red Rome Beauty) × Scotia (McIntosh o.p.). Fruit: medium to large; round-oblate, fairly regular; skin 80% to 95% attractive bright red over light greenish-yellow ground color; lenticels somewhat conspicuous; flesh light greenish cream, fine, tender, moderately juicy; aromatic subacid, very good. Matures a few days before McIntosh; not suitable for processing. Tree: small; spreading; precocious; annually productive.

**Lanz Haralson.** -See HaralredTM.

**Lastre Elstar®.** -See Elstar.

**Lyogold®.** -See Goldenin.

**Maigold (Gold-N-Rose).** -Orig. in Wadenswil, Switzerland, by breeding program of the Swiss Federal Agr. Res. Sta. Franc-Roseau × Golden Delicious; cross made in 1944, introd. in 1964. Fruit: medium, 60-80 mm; skin bright red on exposed side on pale green ground color; no russet; does not shrivel in storage; flesh yellow at maturity, crisp, very firm; flavor mildly subacid, sweet, pleasant. Harvest late, with Winesap; exceptionally long storage life in air. Tree: vigorous; precocious; productive; annual cropping; blossom season late.

**Malling Bountiful.** -See Bountiful.

**Malling Fiesta.** -See Fiesta.

**Malling Greensleeves.** -See Greensleeves.

**Malling Jester.** -See Jester.

**Malling Jupiter.** -See Jupiter.

**Malling Kent.** -See Kent.

**Malling Redsleeves.** -See Redsleeves.

**Malling Suntan.** -See Suntan.

**McShay.** -Orig. in West Lafayette, Ind., by acoperative breeding program consisting of Agr. Expt. Stations of Oregon (S.A. Mehlenbacher and M.M. Thompson), Purdue Univ. (E.B. Williams, J. Janick, and F.H. Emerson), Univ. of Illinois (S.S. Korban and D.F. Dayton) and Rutgers Univ. (L.F. Hough and C. Bailey). Plant pat. 4724, 26 May 1981; assigned to Carlton Plants, Dayton, Ore. McIntosh × PRI 612-4. Ancestry includes Starking (giant limb) and Golden Delicious; this is a fifth-generationderivative of C.S. Crandall’s Rome Beauty × *M. floribunda* 821 cross. Selected in 1970; tested as PRI
1773-8. Named in honor of J.R. Shay, cofounder of the PRI project. Fruit: medium, 65-mm in diameter; round-conic; skin currant red on uranium green ground color, smooth, thin, no russet; flesh chartreuse green, fine-grained, juicy; flavor mildly subacid, quality very good. Ripens 2 weeks before Jonathan; stores 2-3 months at 1°C in air. Tree: vigorous; upright; annual cropping; field immune to apple scab (V. gene); leaves, but not fruit, susceptible to powdery mildew. Flowers after McIntosh, before Rome Beauty; pollen viable.

**Michinoku.** -Orig. in 1981 in Hiroisaki, Aomori, Japan by K. Maeda. Kitakami × Tsugaru. Fruit: large, 270-300 g; skin solid red with prominent lenticels, often much-russeted in cavity, very attractive; flesh coarse, firm, crisp, juicy; good flavor, sweet. Harvest early, with Gravenstein, 5 weeks before Delicious; fruits tend to drop before harvest. Susceptible to water core.

**Moira.** -Orig. by L.P.S. Spangelo, S.J. Leuty, and H.B. Heeney at Agriculture Canada Res. Sta., Ottawa, and Smithfield Experimental Farm, Trenton, Ont. Introduced in 1978. McIntosh × Dg 22-81 [Jonathan × (Rome Beauty × Malus floribunda 821 sib.)]. Tested as Ottawa 548. Fruit: smaller than McIntosh, up to 76 mm in diameter; round-conic; skin color medium lively red on light green to yellow ground color; prominent white lenticels; flesh creamy white, slightly tinged with green; crisp; moderately acid, processed fruit was rated poor for juice and poor for sauce and slices; harvest with Delicious; storage life 2-3 months at 2°C, shorter than McIntosh. Tree: moderately vigorous, spreading; high yield efficiency; blooms 2-3 days after McIntosh; resistant to apple scab and cedar apple rust; susceptible to fire blight; fruit very susceptible to quince rust.

**Murray.** -Orig. by L.P.S. Spangelo, S.J. Leuty, and H.B. Heeney at Agriculture Canada, Res. Sta., Ottawa, and Smithfield Experimental Farm, Trenton, Ont. Introduced in 1980. McIntosh × 52-05-26 [Platt Melba × R16T19 (Wolf River × Malus altsosanginae 804)]. Tested as Ottawa 628. Fruit: medium; color red blush-stripe on green to yellow ground color; flesh white, fine texture, juicy, moderately acid; quality medium good; processed fruit was rated poor for juice, sauce, and slices; harvest 7-10 days before McIntosh, storagelife short, <1 month at 2°C. Tree: moderately vigorous, spreading; medium yields; blooms early with McIntosh; moderately resistant to apple scab, but occasional scab spots have been observed, resistant to cedar apple rust; very susceptible to fire blight.

**Nebuta.** -Orig. in 1981 in Hiroisaki, Aomori, Japan, by K. Maeda. Kitakami × Tsugaru. Fruit: medium-large, 250-300 g; round to round conic; skin solid red; flesh pale yellow, medium firm, somewhat acid. Harvest early, with Gravenstein, 5 weeks before Delicious; tends to drop before harvest. Susceptible to water core.

**New Gold.** -Orig. in New Brunswick, N.J., by L.F. Hough, Rutgers Univ. Introduced in 1987. Golden Delicious × Malling 2439 (Prince Rudolf × James Grieve); cross made in 1974. Tested as NJ89. Rights sold to Star Fruits, France. Fruit: medium to large; shape oblong conic; skin light green, similar to Golden Delicious; flesh texture fine and crisp; flesh color light straw; flavor excellent, Harvest after Golden Delicious; storage life good. Tree: very high vigor; precocity very good, very productive; very hardy; bloom mid to late.


**Nicobel™ Jonagold.** -Mutation of Jonagold; slightly better red color than Jonagold, with 50% red blush over yellow ground color, but less red than Jored (King Jonagold). Assigned to TRECO®, Woodburn, Ore.

**Nittany.** -Orig. in Biggerville, Pa., by Fruit Res. Lab., Pennsylvania State Univ. Introduced in 1977. Open-pollinated seedling of York Imperial on one of its red sports. Fruit: similar to York Imperial; processing type; medium, 175-250 g; color dark pink or orange-red blush, narrow striping on a light clear yellow ground color; shape oblique; flesh texture firm; flesh color deep yellow; soluble solids slightly less than York Imperial; exposed flesh turns brown much more slowly than York Imperial; flesh retains shape during cooking; harvest first 3 weeks of October; longer storage life, 6 months without loss of quality; essentially free of corking. Tree: vigorous; productive; biennial tendency; susceptible to fire blight; bloom date late, similar to York Imperial.

**Noran.** -Orig. from the breeding program at Agriculture Canada Res. Sta., Beaverlodge, Alberta. Introduced in 1976. Columbia (Malus baccata × Broad Green) × Redant (Antonovka open-pollinated). Selected in 1961. Fruit: 60 × 55 mm, uniform sizes; background color green with a brick-red blush on exposed side; flesh cream-colored, crisp, slightly tart; good cooking; harvest late September; stores well in air at 4°C until mid-February. Tree: vigorous, upright-spreading; very hardy, precocious; moderate to good annual cropping.

**Norcue.** -Orig. from the breeding program at Agriculture Canada Res. Sta., Beaverlodge, Alberta. Introduced in 1976. Heyer 12 × Rescue. Selected in 1958. Fruit: medium-small, 55mm diam.; ground color greenish-yellow, almost completely overlaid with dull red stripes; flesh cream-colored with tinges of pink under the skin; moderately crisp and juicy with full, very sweet flavor; harvest before Heyer 12. Tree: vigorous, upright-spreading; very hardy; precocious; annual cropping.

**Norda.** -Orig. from the breeding program at Agriculture Canada Res. Sta., Beaverlodge, Alberta. Introduced in 1976. Rosilda (Prince × McIntosh) × Trail (Northern Queen × Rideau). Selected in 1960. Fruit: large, variable sizes, up to 68 mm; background color green to yellow, overlaid by red streaks; flesh cream-colored, crisp, moderately juicy, very good flavor. Harvest late September; stores at 4°C until mid-January. Tree: vigorous, upright-spreading, moderately hardy; relatively precocious; moderately productive.

**Noret.** -Orig. from the breeding program at Agriculture Canada Res. Sta., Beaverlodge, Alberta. Introduced in 1976. Rescue × Mantet. Selected in 1960. Fruit: medium, 55 × 50 mm; ground color green to yellow, overlaid almost completely with shiny dark red; flesh cream-colored, moderately firm, slightly tart, good flavor. Harvest early, 5 days after Dawn. Tree: small, upright-spreading; very winter hardy, harder than Osman and Heyer 12; precocious; annual cropping.

**Norhey.** -Orig. from the breeding program at Agriculture Canada Res. Sta., Beaverlodge, Alberta. Introduced in 1976. Rescue × Dr. Bill. Selected in 1960. Fruit: similar to Heyer 12; large, 65 × 60 mm; ground color green changing to yellow; flesh deep cream color, crisp, juicy, slightly tart; harvested early September; long storage. Tree: vigorous, upright branchihabit; very winter hardy, harder than Heyer 12; precocious; heavy annual cropping.

**Norfors.** -Orig. from the breeding program at Agriculture Canada Res. Sta., Beaverlodge, Alberta. Introduced in 1976. Haralson × Rescue. Selected in 1958. Fruit: medium-small, 50-mm diameter; green to yellow ground color, almost completely overlaid by a very attractive dark red; flesh cream-colored, crisp, juicy; pleasant flavor, good quality, best dessert; harvest late September; excellent keeping ability. Tree: moderately vigorous, upright-spreading; very hardy; relatively precocious; annual, heavy crops.

**Norhey.** -See Hokuto.

**Novaspy.** -Orig. by A.D. Crowe in the breeding program of Agriculture Canada Res. Sta. Introduced in 1978. McIntosh × PRI 1018-3. Cross made by D.F. Dayton and E.B. Williams at Sturgeon Bay, Wis., in 1963. Fruit: medium-large, 70mm in diameter; shape round to round conic, regular; 80% red stripe on greenish yellow ground; very attractive; flesh white, crisp, fine, tender, juicy; flavor subacid, similar to McIntosh; very good. Harvest early fall, with McIntosh. Tree: moderately vigorous, upright spreading; moderately productive; annual cropping; highly resistant to apple scab; resistant to cedar apple rust and fire blight; susceptible to mildew.

**Novascience.** -See Hokuto.

Nured® Winesap -A red-fruited mutation of Seana® Winesap. Fruit: earlier coloring and darker red than Winesap; striped; russet-resistant.

Oberle. -Orig. in Virginia by George Oberle, Virginia Polytechnic Institute, Blacksburg. Introd. in 1987. Parentage unknown; tested as SC-2-11. Fruit: large, to 85 mm; skin 50% to 75% striped or washed with bright red; lenticels conspicuous at calyx end; occasionally russeted; round, occasionally ribbed, flesh creamy white, crisp, tender, somewhat coarse, juicy, good. Matures very early, 2-4 days before Close, requiring more than one picking. Tree: moderate vigor; upright spreading, somewhat spurry and compact; precocious; annually productive.

Okinawan -Orig. by L.F. Hough, and A.P. Camilo, Santa Catarina Experiment Station. Introd. in 1988. Cross: D1991/15 × D1992/16; hybrid derivatives of M. domestica and M. floribunda; winter chilling requirement 250-300 hours; fruit: medium-large, 250-300 g; oblong to conic; yellow-green with prominent russeted lenticels, sometimes with red-orange blush; flesh firm, aromatic, sweet, juicy, excellent quality; Harvest 1 week before Fuji; useful only in long-season areas; excellent shelf life.

Par-Feet Spur Criterion (Fechtig). -Orig. near Albany, Ore., by A.D. Fechtig. A semi-spur mutation of Criterion. Plant pat. 6043, 1 Nov. 1988; assigned to TRECO®, Woodburn, Ore. Fruit: medium to large; variable in shape; green to yellow groundcolor with pink to rose blush; skin tough; texture firmer than Criterion, coarse; flavor good, aromatic; harvest date mid-September, 1 week earlier than Criterion; storage life good; excellent shelf life. Tree: spur growth habit; tree 25% smaller than Criterion; precocious; annual cropping; spurs break off easily when picking.

Pink Lady. -Orig. from the breeding program of the Western Australian Dept. Agr. Introd. in 1989. Golden Delicious х Lady Williams. Selected in 1979 by John Cripps. Plant pat. applied for; assigned to Carlton Plants, Dayton, Ore. Fruit: medium to large; shape asymmetrical or oblong, with prominent ribbing; skin color attractive red, blushed pattern, yellow ground; texture firm; flavor sweet, tart. Harvest later than Granny Smith; storage life long. Tree: very vigorous; prolonged bloom period.

Pioneer Mac™. -Discovered in 1976 by Ernest Greiner, Marlboro, N.Y. Introd. in 1989. Plant pat. 7002, 29 Aug. 1989; assigned to Adams County Nursery, Aspers, Pa. Open-pollinated seedling of McIntosh; not a McIntosh sport. Fruit: appearance almost indistinguishable from McIntosh, perhaps better color than Rogers McIntosh; 90% red; eating qualities similar to McIntosh. Harvest 10 days after Rogers McIntosh, with much less preharvest drop; excellent storage capacity. Tree: nonspur growth habit, less vigorous than Rogers McIntosh; very productive, similar to McIntosh, with less tendency to biennial bearing.

Primica. -Orig. in Çaqarçay, Santa Catarina, Brazil, by F. Denardi, L.F. Hough, and A.P. Camilo, Santa Catarina Experiment Station. Introd. in 1988. Cross: D1991/11 × D1992/25; hybrid derivatives of C.S. Crandall’s Rome Beauty х M. floribunda; Sierra sib cross; ancestry includes Yellow Newtown, Golden Delicious, Crandall, Cortland, Melba, Wealthy, Starr, and Rome Beauty. Selected in 1982; tested as Malus 29. Fruit: medium size, 150 g; round to round-conic, no russet, bright red over yellow ground, attractive; fleshlight cream, moderately juicy, firm; flavor mildly acid; ripens 3 weeks before Gala® and 6 weeks before Golden Delicious; early ripening results in no bitter pit; stores well in cold storage. Tree: medium vigor; branches 90° angles with the trunk; open, spreading; resistant to apple scab, moderately resistant to powdery mildew. Lower winter chilling requirement than Gala®. Tree: vigorous; life very good, at 18°C it retains good texture for at least 1 month after harvest. Tree: precocious cropping; compact growth habit, requiring little pruning; thinning is necessary; on M.27 stocks, especially suited for small gardens.


Richelieu. -Orig. by R.L. Granger and G.L. Rousselle, Agriculture Canada Research Station, St. Jean-sur-Richelieu, Quebec. Ottawa 521 × 11-51; ancestry includes Melba, McIntosh, Jonathan, Rome Beauty, and Malus floribunda; cross made in 1964 at Ottawa, selected at Trenton, Ont., and evaluated at Freilighsburg, Que. Tested as Ottawa 635. Described in 1983 by G.L. Rousselle; named in 1990 by R.L. Granger. Fruit: medium-large, 65-70 mm diam; color 60% to 65% red on light green ground color; shape oblong conical, flesh white, juicy, crisp, mild to subacid, high sugar and aroma; quality good. Introduced as midseason dessert apple also suitable for culinary use. Harvest 1 week before McIntosh; storage life 3 months or more in air. Tree: vigor medium; spreading; precocious; annually productive; resistant to apple scab (V) and powdery mildew and to fine blight; very susceptible to apple scab and cedar apple rust.

Rouville. -Orig. by R.L. Granger and G.L. Rousselle, Agriculture Canada Res. Sta., St. Jean-sur-Richelieu. Introd. in 1983. 52-05-312 × 69-52; ancestry includes Red Melba, Melba, McIntosh, Wolf River, and Malus arossanguinea 804. Cross made in 1962 at Ottawa, selected in 1972 at Trenton, Ont. and evaluated at Freilighsburg, Que. Tested as Ottawa 627. Described by G.L. Rousselle in 1983; named by R.L. Granger in 1991. Fruit: very large, 70-80 mm diam.; skin 75% red on pale green-yellow ground; shape oblate, symmetrical, somewhat ribbed, flesh white to creamy, juicy, slightly coarse; flavor subacid, high sugar and tannin, quality fair to good; dual purpose, including processing for juice; storage life 2 months. Tree: vigorous, semispreading; precocious; annually productive; cold hardy; resistant to apple scab in most years but foliage susceptible to race 5.


Rubinstar (Rubinstar Jonagold). -Orig. at Gaiberg, Germany in 1980 as a bud mutation of Jonagold. U.S. plant pat. applied for; assigned to Waffer Farms, Wolcott, N.Y. Identical with Jonagold except that it matures about 1 week earlier and at maturity exhibits a more intense red coloration over 70% to 90% of the surface with little or no striping.

**Fruit Tree Res. Sta., in cooperation with Don McKenzie, DSIR Res. Sta., Havelock North, New Zealand.**

**Gala** × **Akane**; cross made in New Zealand in 1969; selected at Morioka in 1981; tested as Morioka #42. Introd. in 1986. U.S. plant pat. 6519, 10 Jan. 1989. Fruit: medium-small, 200-250 g; conical; skin bright red on yellow-green ground, some russet; exposed side; flesh whitish yellow, crisp, fine texture, juicy, slow browning; good sugar/acid balance; excelente dessert quality. Ripens early with Gravenstein, 3 weeks before Gala. Tree: vigorous moderate to moderately weak; upright-spreading; precocious; very productive. Some genetic chlorosis of leaves. Blooms with Gala. Resistant to *Alternaria* blotch, apple scar and rust (*Gymnospor angium yamadae*).

**Sayaka.** -Orig. in Matsumoto, Nagano, Japan, by K. Hatakoshi. Introd. in 1984. Jonathan × Sekai-ichi. Fruit: very large, 300-400 g; purplish red stripe over yellow ground with prominent lenticels, flesh yellow, medium firm with some water core, subacid; harvest 5 days before Gala. Tree: medium vigor; spreading; productive.

**Scarlet.** -Orig. in Matsumoto, Nagano, Japan, by K. Hatakoshi. Introd. in 1984. Akane × Starking Delicious. Japanese Reg. No. P 528. Fruit: 250-300 g; skin brilliant red stripe on yellowish green ground, with no russet; flesh white, firm, juicy, low acid, sugar content 13.5° Brix; harvest early with Gravenstein; stores 1 month. Tree: medium to medium weak vigor; spreading; medium productivity.

**Scarlet Gala.** -Orig. near Cumberland, Ky., by John Creech. Plant pat. 6172, 10 May 1988; assigned to C&O Nursery, Wenatchee, Wash. A red-fruited mutation of Gala with striped color pattern; otherwise similar to Gala.

**Sekai-ichi (World #1).** -Orig. in Kuroishi, Aomori, Japan, in the breeding program of the Aomori Apple Res. Sta. Introd. in 1974. Delicious × Golden Delicious; tested as 67-1. Fruit: very large, 500-600 g, occasionally more than 1000 g; color red striped, similar to Starking, on greenish yellow ground; finish smooth; shape round conic, regular, less elongated than Delicious; flesh medium firm, fine-grained, aromatic; taste similar to Delicious. Harvest with Delicious; stores for 80-120 days. Tree: very vigorous; upright-spreading; not precocious; very productive, but tends to be biennial; blooms with Delicious; self-unfruitful. Susceptible to preharvest drop; susceptible to apple scab and to *Alternaria* leafspot.


**September Ruby.** -Orig. at Morden, Manitoba, Agriculture Canada Research Station. Cross made by C.R. Ure; selected at Beaverlodge, Alberta; introduced by Prairie Fruit Breeding Coop. Committee in 1986. Rescue × Haralson; tested as PF36. Fruit: medium; round-oblate; skin bright red on light-green ground color; flesh greenish, moderately acid. Fruit is suitable for dessert and for juicing. Harvest in early September in the Canadian prairies. Tree: vigorous moderate; annually productive; moderately susceptible to fine blight; hardy to zone 2A.

**Shamrock.** -Orig. in Summerland, B.C., by W.D. Lane and R.A. MacDonald, Agriculture Canada Res. Sta. Introd. in 1986. McIntosh 10C-8-43-1 (irradiated spur type) × Starkspur Golden Delicious; cross made by K. Lapins in 1970; selected in 1978; tested as 8C-1-15. Fruit: medium, about equal to Golden Delicious; shape round, slightly oval; color dark green with white lenticels, very similar to Granny Smith, attractive; sometimes a slightly brown-red color develops on the sun-exposed side; flesh juicy, firm, bruise-resistant; eating quality good, harvest 3 days before McIntosh. Storage life: at 0-3°C keeps in good condition for 7 months. Tree: medium, smaller than McIntosh; compact, spurry growthhabit; very precocious; moderately productive; bloom time early with McIntosh.

**Shizuka.** -Orig. in Kuroishi, Aomori, Japan in the breeding program of the Aomori Apple Res. Sta. Introd. by T. Murakami. Golden Delicious × Indo. Plant pat. applied for. Fruit: very large, 450 g; skin yellow with pink blush; flesh fine-textured, sweeter than Mutsu, moderate acidity; harvest with Delicious; stores until April, longer than Mutsu. Tree: tripod, pollon not viable.

**Spur Criterion.** -See Par-Feet.

**Stark® Adina™.** -See Adina™.

**Starkspur® Ultra Red Delicious (Flanagan Delicious).** -Disc. in 1965 by Russell Flanagan, Thurmont, Md. Plant pat. 3557, 28 May 1974; assigned to Stark Bro’s Nursery, Louisiana, Mo. Red-fruited limb mutation of Starking.

**State Fair.** -Orig. in St. Paul, Minn., by C. Stushnoff, S. Munson, L.B. Hertz, W. Gray, and D.K. Wildung, Univ. of Minnesota. Introd. in 1978. Mantet × Oriole; cross made in 1949; tested in 1959; tested as MN 1639. Fruit: medium, 65-75 mm diameter; skin 80% to 100% attractive bright red, glossy finish; round; flesh texture crisp, juicy; flavor moderately acid, sprightly, aromatic; ripens in early to mid-season; very long storage, long shelf life under Minnesota conditions, but not in Washington. Tree: moderately vigorous, round spreading; fully hardy, no cold injury following -40°F; productive and precocious; no premature fruit drop; susceptible to apple scab, highly susceptible to fire blight.

**Sumac.** -Orig. in Summerland, B.C., by Agriculture Canada Res. Sta. breeding program. Complex pedigree, including Vista Bella and Jerseymac. Selected in 1968 and introd. in 1987. Tested as BC 9F-22-42. Fruit: small; color attractive; better quality than Vista Bella; summer apple, harvest 3 days before Vista Bella; storage life very short. Tree: good growth habit; more productive than Vista Bella.

**Summerdel (Applethorpe Summerdel).** -Orig. in Applethorpe, Queensland, Australia, by L.B. Baxter and A.D. McWate, Gianite Belt Horticultural Research Station. Introd. in 1989. Delicious × Earliblaze: cross made in 1969 by C.W. Winks; tested as 64-111. Fruit: medium, 65-75 mm; globose to flat-globose, often lobed; skin 75% or more medium to cherry red with darker red overstripes; smooth, covered with thin waxy bloom, lenticels not conspicuous; slight stem-end russet; round to slightly conical; flesh creamy white to yellowish white, coarse to medium, firm, juicy; flavor sweet subacid; aromatic. Ripens 2-3 weeks before Delicious; fruit hangs exceptionally well; shelf life about 14 days. Tree: vigorous medium; mature size smaller and more compact than Delicious and Granny Smith; semi-precocous; production regular. Susceptible to scab and powdery mildew. Flowers just before and with Jonathan and Delicious.

**Sundowner.** -Orig. from breeding program of the Stoneville Res. Sta., Western Australia. Golden Delicious × Lady Williams. Introd. in 1979. U.S. rights assigned to Carlton Nursery, Dayton, Ore. Fruit: medium, up to 70 mm; shape oblong; skin color crimson, with pronounced white lenticels; flesh white, very firm; flavor sweet, tart, mildly aromatic; eating quality very good, harvest date very late, after Granny Smith; storage life up to 5 months; shelf life long. Tree: very vigorous, very productive; low chilling, 500 h; early bloom.

**Suntan (Malling Suntan).** -Orig. from breeding program at East Mailing Res. Sta., East Malling, Kent, England, by F.H. Alston and R. Watkins. Introd. in 1974. Protected by Plant Breeders’ Rights. Cox’s Grange Pippin × Court Pendu Plat; tested as A 1585. Fruit: 65 mm in diam. and larger; color orange red blush and stripes on a greenish golden ground, russet, appearance similar to Cox’s Orange Pippin; shape slightly flattened, high acidity, fully aromatic flavor; high quality; ripens late; at 3.3°C, stores well until late March, but subject to low-temperature breakdown at 1.7°C. Tree: vigorous, spreading; high yields every year; tripod; pollon not viable; late flowering, 6 days later than Cox’s Grange Pippin; avoids spring frost; can be pollinated by Golden Delicious and Kent; trees on M.7 roots not precocious.

**Super Chief™ Delicious.** -A mutation of Campbell Redchief Delicious. Plant pat. 6190, 31 May 1988; assigned to Van Well Nursery, Wenatchee, Wash. Fruit: stripe color pattern; color develops about 18 days before Campbell; shape long conic, typey; retains the qualities of Redchief Delicious. Tree: very compact spur habit; precocious.

**Sweet Sixteen.** -Orig. in St. Paul, Minn., by C. Stushnoff, S. Munson, L.B. Hertz, W. Gray, and D.K. Wildung, Univ. of Minnesota.
Introd. in 1979. MN 477 (Malinda open-pollinated) × Northern Spy; cross made by Alderman in 1937; selected in 1950; tested as MN 1630. Fruit: medium to large; 69-89 mm in diam.; shape round-conic; rosy red, attractive smooth finish; quality good with unpleasant, pleasing flavor combined with high sugar, moderate acid, and crisp, fine-textured, juicy flesh; ripens early mid-season with McIntosh, good storage, handling and culinary properties. Tree: moderately vigorous, upright; very winter hardy, as hardy as McIntosh, consistently productive; much less subject to preharvest drop and bruising than McIntosh; resistant to fire blight; not highly susceptible to apple scab nor cedar apple rust.

Swiss Gourmet™ (Arlet). -Orig. in Wadenswil, Switzerland, by B. Krapf and C. Papperswill, Swiss Federal Res. Sta. Introd. in 1984. Golden Delicious × Idared. U.S. plant pat. 6689, 1 Sept. 1989; assigned to TRECO®, Woodburn, Ore. Fruit: medium to large; 75% to 100% red, bright, striped, attractive, occasional russet; better color than Elstar; skin oily when over-mature; shape round to conic; flesh creamy white; texture, fine and firm; taste sweet, tart, very good, less acid than Elstar; harvest 10 days before Jonathan; storage life longer than Elstar. Tree: medium vigor, precocious; yields better than Elstar. Bloom season early to mid-season; diploid.

Teeple Red Empire. -See Royal Empire.


Thome Empire™. -Disc. at Thome Farms, Comstock Park, Mich. A whole-tree, red-fruited mutation of Empire; tested as TF 808. Fruit: fully colored 3 weeks before Empire; deep rich burgundy, slightly darker than Empire.

Tift Spur Rome -Orig. near Brewster, Wash., by Calvin L. Cooper. Discovered as a limb sport of Law Rome Beauty in orchard of Paul G. Tift. Plant pat. 7363, 23 Oct. 1990; assigned to TRECO®. Differs from Law Rome Beauty in that most axillary buds become fruit spurs, tree structure is more compact, the bourse is unusually enlarged, and the fruit is almost totally red, coloring several days earlier.

Tom MacLean. -Orig. in Margaretville, N.Y. Parentage unknown, possibly an open-pollinated seedling of Red Astrachan. Fruit: most nearly resembles Mantet; medium to medium-small; globose; skin color bright red striped on light greenish-yellow ground; finish smooth, flesh creamy white, medium firm, subacid, sprightly, very good flavor. Ripens very early, with Close. Tree: medium-vigorous; upright spreading; precocious; hardy.


Trajan. -Orig. from breeding program at East Malling Res. Sta., East Malling, Kent, England. Introd. by K.R. Tobutt in 1989. Golden Delicious × Wijcik McIntosh. U.S. plant pat. 6226, July 1988. Fruit: medium to medium-small; skin bicolored solid bright red and green; oval-conical; flesh crisp, juicy, sweet, pleasant. Harvested in mid-season, about with Cox’s Orange Pippin. Tree: more vigorous than Wijcik McIntosh; produces side shoots; very winter hardy, as hardy as McIntosh, consistently productive; moderate resistance to fire blight; not susceptible to apple scab; resistant to cedar apple rust; very susceptible to quince rust.

Tsugaru. -Orig. in Kurosaki, Aomori Prefecture, Japan, by the breeding program at the Aomori Apple Res. Sta. Introd. in 1975: Japanese Reg. No. P 277. Golden Delicious open-pollinated. Fruit: large 300-350 g; shape round; color with wide red stripes over yellow-green, not highly attractive; flesh firm, tender, subacid, mild, sweet flavor; juicy; harvest 3 weeks before Delicious; stores 2 months. Tree: preharvest drop.


Williams’ Pride. --Orig. in West Lafayette, Ind., by acocoperative breeding program consisting of the Agr. Expt. Sta. of Indiana (J. Janick, F.H. Emerson, P.C. Pecknold, and J.A. Crosby) and Illinois (S.S. Korban and D.F. Dayton). Introd. in 1987. Plant pat. 6268; 6 Sept. 1988; assigned to Purdue Research Foundation, West Lafayette, Ind. PRI 1018 × N150; cross made in 1973; a sixth-generation deriva- tive of C.S. Crandall’s Rome × M. floribunda 821 sib cross. Pedigree includes Mollie’s Delicious, Julryed, Jonathan, Melba, Red Rome, Wealthy, Starr, Rome Beauty, and M. floribunda 821. Selected in 1979 by E.B. Williams; named in his honor; tested as PRI 2845-1 and as Co-op 23. Fruit: medium-large, 74 mm in diam.; oblate to round, uniform shapes; skin ground color sap green, overcolor darkens to 90% ruby red smooth, slightly waxy, no russetting; flesh light cream colored, medium grained, firm, crisp and juicy; flavor moderately subacid, slightly spicy, rich, quality excellent for the season; when stored at 1C quality and texture are retained 6 weeks.; a summer dessert apple, ripens 7-8 weeks before Delicious; requires more than one picking. Tree: vigorous, spreading; moderately heavy cropping; annual bearer; fruits hang well to tree after ripe; extended bloom period from very early to late mid-season; frost killing of blossoms less severe than Delicious, Jonathan, and Golden Delicious; immune to apple scab, apparently resistant to cedar apple rust, and moderately resistant to fire blight and powdery mildew; only slightly predisposed to bitter pit and water core.


Yoko. -Orig. in Gunma Prefecture, Japan. Introd. in 1981; Japanese Reg. No. 129. Golden Delicious open-pollinated. Fruit: large, 300 g; shape round oval; color solid red with slight stripe, tendency to russet; flesh firm, white, sweet, slightly coarse; harvest late, 5 days after Mutsu; storage life excellent.

---

ROOTSTOCKS FOR APPLES

James N. Cummins

or five rooted shoots; few spines; few root primordia on liners. More winter-hardy than M.9.

*Budagovsky 9* (Bud. 9).-Orig. at Michurinsk, USSR, by V.I. Budagovsky, Michurinsk College of Agriculture. A Red-Leaved Paradise (B9) × Bud. 13-14. A semi-vigorous clonal rootstock with winter hardiness similar to that of Common Antonovka. More precocious than MM.111, less so than MM.106. Some burrknots develop, usually less than on MM.111. Easily propagated by hardwood cuttings or in the stoolbed. Foliage bronze; wood, but not inner bark, red. No suckers. Susceptible to scab and powdery mildew. On an unbranded tree, most terminals carry fruit buds. Facultative parthenocarpic.

*Budagovsky 57-491* (Bud. 491).-Orig. at Michurinsk, USSR, by V.I. Budagovsky, Michurinsk College of Agriculture. A very dwarfing clonal rootstock with greater winter hardness than Common Antonovka. Wood is very brittle; trees require firm, permanent support. Gives tree size control similar to M.27. Induces very early, very heavy fruiting. Wood is pink. Few burrknots. Propagated in stoolbeds. No suckers. Very susceptible to fire blight, woolly aphids; not resistant to Phytophthora.

*C.-Orig. at Louisiana, Mo., by Harry Guengerich, Stark Bro’s Nurseries. Introd. in 1974. Selected from population of open-polipollinated seedlings of Clark Dwarf (M.8) for use as dwarfing interstem tolerant of common latent viruses. Plant pat. 3057, 10 Aug. 1971; assigned to Stark Bros. Nurseries. Tree size control similar to that of M.9 when used as interstock or as rootstock. Less brittle than M.9; similar in susceptibility to fire blight and woolly aphids. Tolerant of common latent viruses. Induces early, heavy production. Very few suckers and burrknots. Compatible with wide range of cultivars.

**Jork 9** (J9).-Orig. at Jork, Germany, by K.-H. Tiemann and H.-J. Dammann, Fruit Tree Research Station. Introd. as a clonal rootstock in 1981. Selected from population of open-polipollinated seedings of M.9. Compared to M.26, J9 is slightly more dwarfing, induces heavier production, and is more brittle. Suckers are rare. Permanent support is required. Extremely susceptible to fire blight and woolly aphids; susceptible to scab and to powdery mildew. Somewhat more winter hardy than M.9, less hardy than M.11. Root primordia are conspicuous on 2-year-old wood; many burrknots develop in the orchard; radial growth of burrknots is very rapid and girdling may occur. In the stoolbed, J9 is easily propagated, very productive of clean-shanked liners.

MAC-9.-Orig. at Michigan State Univ., sublicensed to TRECO. M.9 open-pollinated, selected in 1959. Compared to M.26, Mark is slightly more dwarfing, more precocious, more productive, better anchored, and somewhat less sensitive to fire blight. In limited orchard testing, Mark has been more winter hardy than M-7, MM.106, and MM.111. Tolerant of Phytophthora; susceptible to fire blight, woolly apple aphids. Tolerant of heavy soils; irrigation required on light sands. Mark appears to be tolerant of common latent viruses. In the nursery, staking of budlings is recommended to prevent blowouts; scions defoliate early, permitting early digging. Moderate numbers of burrknots initially, but rapid radial extension may result in girdling. Readily propagable in stoolbeds and by micropropagation.

*Maruba-kaido N-1.*-A clonal selection of the weeping form of Maruba-kaido (Malus prunifolia ringo), the standard vigorous rootstock of Japan. Semi-vigorous, hardy, resistant to woolly aphids and Phytophthora. Greatest potential value appears to be as rootstock to support interstem system. Tolerant of both drought and water-logging. Sensitive to common latent viruses.

*Nertshinsk.*-Orig. in Morden, Manitoba, by C.R. Ure. Malus baccata open-pollinated, selected in 1961. Valuable as a dwarfing interstem that is tolerant of extremely low midwinter temperatures. Very susceptible to fire blight. Very early budbreak. Virus sensitivities unknown.

*Novole.*-Orig. in Geneva, N.Y., by J.N. Cummins, H.S. Aldwinckle, and R. Byers. Selected from a population of Malus prunifolia open-pollinated seedlings; putative pollen parent is *M. sieboldii*; tested as NY163, Plant pat. 5333, 13 Nov. 1984. Introd. in 1983 as a clonal trunk and rootstock nonpreferred by pine and meadow voles; both vole species consistently reject Novole tissue in free-choice tests. Not tested with related vole species. Novole is resistant to *Phytophthora cactorum* and apple scab, and moderately resistant to powdery mildew. Very sensitive to apple stem grooving virus. Propagated easily in the stoolbed, by hardwoodcuttings, and by micropropagation. Burrknots are absent. Scion cultivars grafted directly on Novole produce very large, productive trees. When a 20-cm virus-free dwarfing interstem is high-worked at ≈40-50 cm above soil level, a very productive dwarfed tree results. As a scion variety, Novole produces many white flowers over a period of 7-9 days beginning 2 days after king blossom opening of Delicious and just before Golden Delicious; pollen is abundant and flowers are attractive to bees.

*Ottawa 3.*-Orig. in Ottawa, Ont., by Lloyd Spangelo, S.O. Fejer, S.J. Leuty and R.L. Granger, Agriculture Canada Res. Sta. Introd. in 1974 as a hardy dwarfing rootstock. Not patented. Malling 9 x Robin Crab. Used either as a rootstock or interstock, slightly less dwarfing than M.9, more dwarfing than M.26. Non-brittle Liners are sturdy, completely free of spines. Usually large leaves. Micropropagation is efficient; very poor rooting in stoolbed; can be propagated by root cuttings. Induces very early, very efficient fruit production. Produces no burrknots, no suckers. More winter harder than M.26. Very resistant to Phytophthora spp.; susceptible to fire blight and to woolly aphids. Sensitive to apple stem grooving virus. A highly useful parent in rootstock breeding; transmits Phytophthora resistance, dwarfing capacity, freedom from spines, and distinctive large leaves; each five-carpelled fruit produces 25 to 35 viable seeds.


*P.2.*-Orig. in Skierkiewicz, Poland, by S. Zagaja and A. Czyczyk, Res. Inst. of Pomology. M.9 × Common Antonovka. A clonal rootstock about as dwarfing as M.26. Slightly less winter hardy than Common Antonovka. Burrknots are rare. Induces very early, heavy fruiting. Stoolbed propagation is satisfactory. Late budbreak. Moderately susceptible to fire blight; susceptible to woolly aphids; resistant to *Phytophthora*. May be susceptible to tomato ringspot virus.


*YP.*-Orig. in Pääkkö, Finland, by J. Säkä, Agr. Res. Center, Dept. of Horticulture. Introd. in 1977. *Malus baccata* open-pollinated; tested as Mb 4. Clonal rootstock, fairly easily propagated in stoolbed; easily raised by softwood cuttings and root cuttings. Vigorous, similar to Alnarp 2. Induces early fruiting and very good level of productivity in scion variety. Compatible with broad spectrum of scion varieties. Much more winter harder than either Alnarp 2 or M.26; induces early dormancy in scion. Leaf fall early; budbreak early.
APRICOT
R. E. C. Layne and D. W. Cain

Flameburst™ (Suaprione). -Orig. in Fresno, Calif., by John Weinberger, Superior Farming Co. Introd. in 1987. Plant pat. pending; assigned to Superior Farming Co. Annabelle × open-pollinated seedling of Lulubelle. Fruit: medium to large; round to slightly oblong; skin bright red blush on orange background, flesh bright orange, medium firm, juicy; excellent eating quality, superior to Castlebrite. Ripens 7-10 days after Castlebrite. Pollen-sterile. Tree: vigorous; productive. Suitable for fresh-market shipping.


Goldbar. -Orig. in Prosser, Wash., by T.K. Toyama, Irrigated Agr. Res. and Ext. Center, Washington State Univ. Introd. in 1989. Plant pat. pending; assigned to Washington State Univ. Goldrich × Blenril. Cross made in 1972; selected in 1976; tested as PA 7201-1. Fruit: very large; sides slightly compressed; skin light red with reddish-purple blush covering 20% of surface; flesh orange, moderately juicy, firm; quality fair; ripes 2 weeks before Wenatchee at Prosser; for fresh market. Tree: vigorous. Flowers require cross pollination; Goldrich, Perfection, and Goldstrike are effective pollinizers.

Goldstrike. -Orig. in Prosser, Wash., by T.K. Toyama, Irrigated Agr. Res. and Ext. Center, Washington State Univ. Introd. in 1989. Plant pat. pending; assigned to Washington State Univ. Goldrich × (Earrilril × Blenril). Cross made in 1972; selected in 1975; tested as PA 7221-1. Fruit: very large; round to oval; skin 20% reddish purple blush on light orange background; flesh orange, firm, moderately juicy; quality fair; ripes 2 weeks before Wenatchee at Prosser; for fresh market. Tree: vigorous. Flowers require cross-pollination; Goldrich, Perfection, Rival, and Goldbar are effective pollinizers.

Harogem. -Orig. in Harrow, Ont., by R.E.C. Layne, Agr. Canada Res. Sta. Introd. in 1979. Rouge du Roussillon × NJA 2 (Morden 604 open-pollinated). Cross made by L.F. Hough and C.H. Bailey, Rutgers Univ., in 1963; selected by Layne at Harrow in 1969; tested as HW405. Fruit: medium; ovate; compressed sides; ski 60% glossy red blush on bright orange background, exceptionally attractive; flesh orange, exceptionally firm, moderately juicy, good texture; good flavor; freestone; ripens July 30 at Harrow; for freshmarket. Tree: vigorous; medium; spreading; consistently productive; hard medium like Veecot. Resistant to brown rot, Leucostoma canker, skin cracking, and preharvest drop; moderately susceptible to bacterial spot.

Harval. -Orig. in Harrow, Ont., by R.E.C. Layne, Agr. Canada Res. Sta. Introd. in 1989. Veecot × HW435 [Rouge du Roussillon × NJA 2 (Morden 604 open-pollinated)]. Crossmade in 1969; selected in 1974; tested as HW437. Fruit: medium to large; skin 30% red blush on orange background, attractive; flesh orange, very firm; good quality; freestone; ripens 3 Aug. at Harrow; for late-season fresh market and home canning. Resistant to bacterial spot, Leucostoma canker, skin cracking and preharvest drop; fruit and spur moderately susceptible to brown rot.

Jerseycot. -Orig. in Cream Ridge, N.J., by S.A. Mehlebacher, L.F. Hough, and C.H. Bailey, New Jersey Agr. Expt. Sta. Introd. in 1986. RR18-64 × CR3-135; pedigree includes Scout, McClure, Perfection, and Phelps. Cross made in 1970; selected in 1977; tested as NJA44. Fruit: medium; round; ski pale orange with no blush; flesh bright orange, sweet, juicy, soft, good quality, with distinctive cantaloupe aroma; usually freestone; ripens early, 2 weeks before Goldcot at Cream Ridge; for U-pick and roadside markets. Pit: medium; tan; surface grainy; kernel bitter. Tree: upright to spreading; unusually consistent cropper; cold hardy in New Jersey. Blossom time early, 1 day before Veecot. Resistant to bacterial spot; moderately resistant to brown rot and skirracking; Leucostoma cankers have not been observed.

Puget Gold. -Orig. in Anacortes, Wash., by R.A. Norton, J. King, and G.A. Moulton, Northwestern Washington Res. and Ext. Center, Mt. Vernon. Introd. in 1987. Chance seedling of unknown parentage, discovered by Jean Copeland. Fruit: medium; roundish ovate; skin light red to red-orange blush on clear yellow background; flesh deep yellow-orange, firm, sweet; freestone; ripens about 8 Aug. at Mt. Vernon, Wash., 1 week later than Rival; for home gardens. Tree: moderate to low vigor; spreading; prolific and consistent cropper; partially self-fruitful. Particularly adapted to a cool, maritime climate.


Suaprione. -See Southerner.

Suaprivo. -See Flameburst.

Tomcot. -Orig. in Prosser, Wash., by T.K. Toyama, Irrigated Agr. Res. and Ext. Center, Washington State Univ. Introd. in 1989. Plant pat. pending; assigned to Washington State Univ. Rival × P63-265 (Goldrich open-pollinated). Cross made in 1970; selected in 1974; tested as PA 7005-8. Fruit: large; oval to round; skin has trace of blush on light orange background, attractive; flesh light orange, firm, moderately juicy; quality very good, ripens very early, 18 days before Wenatchee at Prosser; for fresh market. Tree: vigorous; blooms early, 2 or 3 days before Wenatchee; flowers partially self-fertile.


Velmaglo. -Orig. in Vineland Station, Ont., by O.A. Bradt and E.T. Andersen, Hort. Res. Inst. of Ont. Introd. in 1978. Veecot × Farmingdale. Cross made in 1960; selected in 1968; tested as V60091. Fruit: medium; skin light red blush on bright orange background; flesh orange; flavor fair to good, freestone; ripens uniformly with Goldcot in last week of July at Vineland Station. Tree: vigorous; spreading; productive. Moderately resistant to bacterial spot, brown rot and Leucostoma canker; resistant to preharvest drop and to skin cracking.

Vivagold. -Orig. in Vineland Station, Ont., by O.A. Bradt and E.T. Andersen, Hort. Res. Inst. of Ont. Introd. in 1978. Veecot × V49024 (Geneva × Gibb). Cross made in 1960; selected in 1965; tested as V60102. Fruit: medium; skin bright orange, attractive; flesh orange, somewhat dry; flavor good, freestone; ripens 1 week after Veecot at Vineland Station; for fresh market and home canning. Tree: moderately vigorous; spreading; moderately productive. Resistant to skin cracking and preharvest drop; moderately resistant to brown rot and bacterial spot.

Westcot. -Orig. in Morden, Manitoba, by L. Kerr, Agr. Canada Res. Sta. Introd. in 1982. (Scout open-pollinated) × (McLure open-pollinated). Fruit: medium; ovate; skin light reddish blush on yellow-orange background, flesh orange, smooth, juicy, sweet; flavor mild; freestone. Tree: vigorous; tree shape irregular; cold hardy; more bud-hardy than Scout or Morden 604; medium productivity (but best in very cold locations). At Morden, flowers 25 Apr. to 15 May; fruit ripens 7 to 15 July.

ROOTSTOCKS FOR APRICOTS
J. N. Cummins and Tom Beckman

Avimag. -See Cadaman®.

Cadaman® (Avimag). -Not compatible.

Citation. -See under Peaches. Apricot trees dwarfed by 20% to 30%.

Ferciana. -See Ishitara®.

GF 31. -Orig. in Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard, INRA Fruit Research Station. Sel. from a Prunus cerasifera
× P. japonica cross. Intro. as vigorous, productive stock for apricots. Compatible with very broad range of apricot varieties. Tolerant of high soil moisture and high calcium. Very susceptible to verticillium.

GF 677. -See under Peaches. Compatible under Bergeron, Luizet, Paviot, and Polonais, but incompatible with most varieties.

Hansen 536. -See under Almonds. Incompatible.

Hansen 2168. -See under Almonds. Incompatible.

Ishtar® (Ferciana). -See under Plums. Semid warfing. Induces early, heavy fruiting of Bergeron; compatible with most varieties, including those of the Roussillon group. Anchorage not as good as that of Myran.

Marianna GF 8-l. -See under Plums. Not widely tested under apricots; known to be compatible under some, but not all, varieties.

Mr.S.2/5. -See under Peaches. Compatible with apricot.

Myran® -See under Peaches. Suitable as a vigorous rootstock for certain apricot varieties.

Nemared. -See under Peaches. Compatible with apricot.

BLACKBERRY

James N. Moore

Chester Thornless. -Orig. in Carbondale, Ill., by J.W. Hull, USDA and Southern Illinois Univ. Introd. in 1985. SIUS × Thornfree; cross made in 1968; tested as SIUS 68-6-17. Fruit: large, high quality, v. firm; does not soften or lose color in hot weather. Ripens late, with Thornfree. Plant: vigorous, semi-trailing thornless canes, very productive, cold hardy. Most resistant of eastern U.S. thornless blackberries to cane blight. Propagates readily by tip layering, softwood cuttings or micropropagation.

Choctaw. -Orig. in Fayetteville, Ark., by J.N. Moore and J.R. Clark, Dept. of Horticulture, Univ. of Arkansas, Introd. in 1988. (Dar- row × Brazos) × Rosborough; cross made in 1975; selected in 1978; tested as Ark. 876. U.S. Plant pat. 6678, 21 Mar. 1989; assigned to Univ. of Arkansas. Fruit: medium large (5.7 g), short conic, glossy black, similar in firmness to Shawnee, good flavor, small seed size. Fruit ripens very early, 2 weeks before Shawnee. Plant: very erect, very prolific, thorned, produces canes from root cuttings; very productive in warm winter locations. Immune to orange rust, moderately resistant to anthracnose, moderately susceptible to powdery mildew, susceptible to rossette, hardy to -20C.

Ebano. -Orig. in Pelotas, Brazil, by Maria do Carmo M. Bassols and James N. Moore, UEPAE de Cascata and Univ. of Arkansas. Introd. 1981. F. of Comanche × (Thornfree × Brazos); cross made in 1972; selected in 1975; tested as Black 44. Fruit: glossy black, medium large (5.0-6.5 g), firm, seeds smaller than Thornfree, good fresh and processed quality. Ripens very late, 40 days after Brazos. Excellent quality for production of jams, jellies, yogurt, and ice cream. Plants: canes semi-erect, genetically thornless, vigorous, productive, adapted to mild winter climates (<400 h chilling).

Illini Hardy. -Orig. in Urbana, Ill., by Robert M. Skirvin, Univ. of Illinois. Introd. in 1990. NY95 × Chester; tested as Ill. 4-1. Plant pat. pending. Fruit: medium size, elliptical, shiny black, good flavor, resembles Darrow. Plant: very vigorous, erect thorny canes, late ripening, very cold hardy (to -29C).

Kotata. -Orig. in Corvallis, Ore., by George Waldo, USDA and Oregon State Univ. Introd. in 1984. (Pacific × Boysen) × (Jenner × Eldorado); selected in 1950; tested as OR-US 1050. Fruit: large, equal to Marion in size; glossy black, attractive; easily detached, firmer than Marion or Boysen, good shelf life, good flavor. Superior for fresh shipping. Plant: vigorous thorny trailing canes, yields equal Marion in most years, as resistant to cane and leaf as Marion and more winter hardy than Marion or Boysen.

Navaho. -Orig. in Fayetteville, Ark., by J.N. Moore and J.R. Clark, Dept. of Hort., Univ. of Arkansas. Introd. in 1988. (Thornfree × Brazes) × (Ark. 550 × Cherokee); cross made in 1977; selected in 1980; tested as Ark. 1170. U.S. Plant pat. 6679, 21 Mar. 1989; assigned to Univ. of Arkansas. Fruit: medium (5.0 g); short conic, glossy black, very firm; stores well; high soluble solids, excellent flavor fresh and processed. Fruit ripens late, 7 days after Shawnee. Plants: genetically thornless, erect canes; suckers poorly from roots; not as productive as Shawnee. Plants and fruit moderately resistant to anthracnose; orange rust has been observed in one location; reaction to rossette not known. Plants have shown good cold hardiness to -25C.

Perron's Black. -Orig. in Quebec, Canada, by W.H. Perron & Co., Ltd. Introd. in 1987. Selected from wild Rubus canadensis on the Appalachian plateau of southern Quebec. Fruit: black, slightly conical, 30 × 20 mm, high sugar content, aromatic. Plants: thornless, trailing canes, vigorous, no suckering, cold hardy.

Shawnee. -Orig. in Fayetteville, Ark., by J.N. Moore, W.A. Sistrunk, and J.B. Buckley, Dept. of Hort., Univ. of Arkansas. Introd. in 1984. Cherokee × (Thornfree × Brazos); cross made in 1971; selected in 1974; tested as Ark. 730. U.S. plant pat. 5686; 11 Mar. 1986; assigned to Univ. of Arkansas. Fruit: very large (7.7 g); maintains size through season, shiny black; medium firm; good flavor. Plant: late ripening, long harvest period, very productive, thorny canes, very erect cane growth, vigorous, prolific, produces canes readily from root cuttings. Immune to orange rust, moderately resistant to anthracnose, susceptible to rossette, hardy to -23C.

Silvan. -Orig. in Victoria, Australia, by G.R. McGregor and K.H. Koon, Research Inst., Dept. Agr., Victoria. Introd. in 1984. U.S. Ore 742 × Marion; seed obtained from G.F. Waldo in 1952; selected in 1964. Fruit: shiny purple black; 6-8 g; softens after harvest; excellent flavor, sweeter and less acid than Boysen, Marion, and Young; ripens 2 weeks earlier than Marion. Plants: primocanes trailing, densely armed, vigorous, high-yielding. Tolerant to anthracnose and crown gall and stress tolerant to wind, drought, and heavy soils. Cold hardiness has not been evaluated.

Waldo. -Orig. in Corvallis, Ore., by F.J. Lawrence, USDA and Oregon State Univ. Introd. in 1989. ORUS 1122 × ORUS 1367; selected in 1976; tested as ORUS 2031. Fruit: large, equal in size to Marion; firmer than Marion; glossy black; good shelf life: good quality fresh and processed. Plant: thornless, growth habit similar to Evergreen, moderately vigorous, yields high (9-12 t/ha in Oregon), more resistant to cane and leaf spot than Marion or Boysen, hardiness unknown.

BLUEBERRY

Paul Lyrene

Baldwin. -Orig. in Tifton, Ga., by M.E. Austin, Univ. of Georgia, and A. D. Draper, USDA. Introd. in 1985. Tifblue × GA 6-40 (Myers × Black Giant); tested as T-117. Fruit: medium; skin dark blue; scar small; medium firm; good flavor. Very productive, late-ripening rabbiteye blueberry (V. ashei). Chilling requirement 450-500 h. Intended primarily for pick-your-own because of long ripening period.


Bounty. -Orig. at Cypress Creek, N.C., by G.J. Galletta and A.D. Draper. Tested as NC 1074; V. corymbosum. Introd. in 1987. Murphy
× G-125. Selected in 1970; tested by J.R. Ballington, C.M. Mainland, S.D. Duke, A.D. Draper, and G.J. Galletta. Fruit: very large; color, stem scar and firmness above-average; good flavor; ripens early midseason to midseason. Bush: consistently productive; field tolerance to cane canker and stem blight.

Cape Fear. -Origin at Castle Hayne, N.C., by G.J. Galletta and A.D. Draper. Southern highbush mainly V. corymbosum. US 75 (V. darrowi Fl. 4B × Bluecrop) × Patriot. Selected in 1975; tested as NC 1525 by J.R. Ballington, C.M. Mainland, S.D. Duke, and A.D. Draper. Fruit very large; good color, scar, and firmness. Bush: Precocious; productive; vigorous; semi-upright. Roots readily from cuttings. Susceptible to cane canker; field resistant to stem blight. Chilling requirement 500-600 h.


Revelle. -Origin at Castle Hayne, N.C., by J.R. Ballington. Introd. in 1990. Southern highbush, mainly V. corymbosum. NC 1171 (G111 (Bluecrop × Berkeley) × Fla. 61-7 [O.P. seedling of US39 × (V. corymbosum × V. darrowi)]) × NC SF-12-L [Ivanhoe × NC 297 (Weymouth × Crabbe-bi)]. Selected in 1979; tested as NC 2054 by J.R. Ballington, S.D. Duke, and C.M. Mainland. Fruit: small to medium; light blue color; good picking scar; good quality; excellent firmness; slightly earlier ripening than O’Neal or Wolcott. Bush: excellent vigor and precocity; good productivity; narrowly erect habit; broad soil adaptation; resistant to stem canker; some field tolerance to stem blight. Chilling requirement 600-800 h. Adapted to mechanical harvesting for fresh and processing markets.


CHERRY

Brooks. -Origin at Wolfskill Ranch, Univ. of California, Davis, by P.E. Hansche, W. Beres, J. Doyle, and W.C. Micke. Introd. in 1988. Rainier × Early Burlat. Plant pat. 6676, 14 Mar. 1989; assigned to Regents of Univ. of California. Fruit: large; skin dark burgundy red, occasionally some streaking and motting over basal shoulders; flesh color variable with rays and streaks of red and pink, firm; numerous fibers; nearly freestone without air space; susceptible to rain cracking. Flavor exceptional, sweet, well-balanced, rich; not aromatic; overall quality outstanding. Ripens midway between Early Burlat and Bing; fruit hangs well on tree. Tree slightly smaller than most sweet cherries; upright to upright-spreading; hardy in San Joaquin Valley; very productive; annual bearing. Bloom date between Early Burlat and Bing.


ROOTSTOCKS FOR CHERRIES

J. N. Cummins and Tom Beckman

Camil (GM.79). -Origin at Kalmthout, Belgium, by P. Monin and R. Trefois. Fruit &Nut Research Station, Gembloux. Introd. in 1986. A Prunus canescens selection of unknown provenance. Original selection in 1964; tested as 3-8-K. Plant pat. 5802, 18 Nov. 1986; assigned to TRECO®, Woodburn, Ore. A semi-dwarfing rootstock for sweet cherries and tart cherries; tree size is reduced by about one-third compared to F12/1. Induces fruiting of sweet cherries earlier than does mazzard; Montmorency fruiting begins 1 year later than trees on mahaleb. Very susceptible to Phytophthora cambivora, P. dreschleri, and P. megasperma. Resistant to cherry leafspot. Readily propagated by greenhouse cuttings and in micropropagation. Ungrafted tree is moderately vigorous, drooping habit.


**Dami** (*GM.61/1*). -Orig. at Gembloux, Belgium, by P. Monin and R. Trefois, Fruit and Nut Research Station. Selected from open-pollinated population of *Prunus dasykensis*; tested as 4-1-K. Introduced in 1986. Plantpat. 5803, 18 Nov. 1986; assigned to TRECO®, Woodburn, Ore. Semi-dwarfing rootstock for sweet and tart cherries, compatible with wide range of cultivars. Reduces tree size by about one-half. Moderately precocious, inducing fruiting of sweet cherries 1 or 2 years earlier than does mazzard; for Montmorency, not as precocious as mazzahel. More tolerant than mazzard to *Phytophthora cambivora* and *P. megasperma*; relatively tolerant of waterlogging. Resistant to cherry leaf spot. Susceptible to the mycoplasma causing Western X-disease. Readily propagated by hardwood cuttings and in micropropagation. Non-suckering; well-anchored. Ungrafted tree is of moderate vigor, semi-upright.

**GM.9.** -See Inmil.

**GM.61/1.** -See Dami.

**GM.79.** -See Camil.

**Inmil** (*GM.9*). -Orig. at Kathnhtou, Belgium, by P. Monin and R. Trefois, Fruit and Nut Research Station. A *Prunus incisa × P. serrula* clone of unknown provenance; tested as 9-14-K. Introduced in 1986. Plantpat. 5801, 18 Nov. 1986; assigned to TRECO®, Woodburn, Ore. Dwarfing rootstock for sweet and tart cherries, compatible with wide range of cultivars. Reduces tree size by two-thirds compared to F1/2-1. For sweet cherries, induces fruiting 1 or 2 years earlier than does mazzard; under Montmorency, as precocious as mazzahel. Susceptible to *Phytophthora cambivora* and *P. megasperma*. Ungrafted tree is dwarfish, semi-upright.

**“M×M” Series.** -Orig. at Forest Grove, Ore., by Lyle Brooks. Selected from a population of mahaleb open-pollinated seed; vegetative attributes indicate pollen parent was mazzard, hence the “Mahaleb × Mazzard” designation and its “M×M” diminutive. Semi-vigorous rootstocks for sweet cherries. Propagated by hardwood cuttings. Relatively resistant to *Phytophthora cambivora* and *P. megasperma*. Relatively tolerant of *Pseudomonas syringae*; appear to have promise as frameworking stocks. Suckering may be heavier than F1/2/1. Induce flower density and production efficiency slightly greater than does mazzard seedling stock. Clones available in commerce include M×M-2, M×M-14, M×M-39, M×M-46, M×M-60, and M×M-97.

**CHESTNUT**

**Queensland Earlisweet.** -Orig. in Applethorpe, Queensland, Australia, by C.W. Winks, A.M. Hibberd, and B.L. Topp, Granite Belt Hort. Res. Sta. Introduced in 1988. Early Jewel × Early Gem (both parents have *Prunus cerasifera* and *P. salicina* in pedigree); selected in 1981; tested as GB 3-91. Fruit: small, 32 mm; round; skin color bright red becoming dark red at full maturity; flesh yellow, melting, sweet, juicy; very vigorous; shape intermediate between upright and spreading; have mazzard seedling stock. Clones available in commerce include M×M-964, M×M-14, M×M-39, M×M-46, M×M-60, and M×M-97. Moderately susceptible to big bud mites.


**Williamette.** -Orig. in Corvallis, Ore., by Shawn A. Mehlbacher and Maxine M. Thompson, Oregon State Univ. Introduced in 1990. Montebello × Compton (Compton appears to be a *Prunus × Daviana* hybrid). Cross made in 1973; selected in 1979; tested as OSU 43-58. Nuts: medium (2.8 g); color dark brown, attractive; kernel 50% by weight; pellicle easily removed, sweet; dry; flavor and texture very good. Husk 50% longer than nut, not entirely free-husking. Matures 1 week later than Barcelona. Introd. for the blanched kernel market. Tree: vigorous; productive; susceptible to eastern filbert blight; intermediate susceptibility to big bud mites.

**GRAPE**

**John A. Mortensen, Bruce I. Reisch, and David Cain**


**Beauregard.** -Orig. in Cincinnati, Ohio, by Byron T. Johnson. Introduced in 1982. Open-pollinated seedling of *V. rupestris* Fl. Worth #3, Richter (PI 232091); pollen parent apparently French hybrid. Tested as selection 64.RFW-1. Berry: small; skin dark blue-black; round; flavor upright, straight-boled, timber type form; cropping sparse; leaves light green, American-type with acute base and very dentate margins.


**Black Beauty.** -Orig. in Brooks, Ga., by B.O. Fry and W.G. Ison. Introd. in 1988. Fry × 12-12-1 muscadine. Plant pat. pending. Female muscadine. Berry: large; 31 mm; skin black; edible; dry scar; good flavor; 24% solids; ripens mid- to late season. Cluster large. Vine: very vigorous; medium productivity; disease resistant.


**Black Imperial™** (Sugrathree). -Orig. in Madera, Calif., by John M. Garabedian. Introd. in 1973 as Sugrathree. Plant pat. 3295, 16 Jan. 1973; assigned to Superior Farming Co. Parentage: unnamed seedling of Ribier × Thompson Seedless. Fruit: large; skin purplish-black; tough; ovoid. Ripens 7-10 days before Black Monukka, which it most resembles. Does not require gibberellin applications to attain commercial size.


**Brandis.** -Orig in Terryville, Conn., by R. Grem. Introd. in 1985. Origin : roadside chance seedling; appears to have V. aestivalis, V. riparia, and V. labrusca ancestry. Berry: medium; skin blue; flesh pulpy until very ripe; pleasant flavor. Cluster medium cylindrical; loose to moderately compact; small shoulder. Vine: vigorous; productive compared to other wild vines; tolerant of marginal soils; slightly less hardy than Concord; female. Resistant to black rot; moderately resistant to powdery and downy mildew. Produces pleasant, fruity wine.

**Century I.** -Orig. in Blacksburg, Va., by George D. Oberle, Virginia Polytech. Inst. and State Univ. Introd. in 1973, Seye-Villard 20-347 × Dunstan 3 (Chasselas Violet × Golden Muscat); tested as VPI 32. Berry: large; skin reddish black. adherent; ovate; flesh crisp, meaty, with a sweet and fruity flavor. Cluster large. Vine: ripens late mid-season; over-productive; above-average vigor; medium cold hardy.

**Challenger.** -Orig. in Mountain Grove, Mo., by Kenneth W. Hanson and Merlyn A. Haag, Missouri State Fruit Exp. Sta. Introd. in 1983. Parentage known. Selected in 1968; tested as G-2963. Berry: medium; round, tear-shaped; skin orange-red to deep red, thick tough, adheres to pulp; flesh very mealy and firm with one or two soft, small seeds; high soluble solids; sweet, delicate flavor. Ripens 10 days after Reliance and Himrod. Cluster: medium; loose, with almost no shoulders. Vine: moderately vigorous; winter hardiness comparable to Reliance. Susceptible to black rot, downy mildew, and powdery mildew.

**Darlene (Darling).** -Orig. in Brooks, Ga., by W.G. Ison. Introd. in 1988. 5-11-3 × Carlos. Plantpat. pending. Female muscadine. Berry: 31 mm; consistently large throughout vine; skin bronze to pinkish red, dry scar; melting pulp; 24% solids; excellent flavor. Ripens early to midseason. Cluster large. Vine vigorous, disease resistant.

**Early Superior Seedless™** (Sugrafive). -Orig. in Riverside Co., Calif., by Luther C. Hahn and Joseph Maranto, Superior Farming Co. Introd. in 1983 as Sugrafive. Plant pat. 5151, 6 Dec. 1983; assigned to Superior Farming Co. Bud mutation of Superior Seedless, discovered in 1978. Fruit: slightly smaller than Superior Seedless; similar in color and shape; ripens with Perlette, 7 to 10 days before Superior Seedless. Develops a very mild muscat flavor when very ripe. Cluster: medium, loose to compact, cylindrical to conical. Vine: very vigorous; medium to low productivity; breaks bud very early.

**Edelweiss.** -Orig. in Osceola, Wis., by E. Swenson, P. Pierquet, and C. Stushnoff. Introd. in 1980. MN 78 (Beta × Witt) × Ontario; selected in 1955; tested as E.S. 40. Seeded table grape. Berry: medium; round; skin green, slipskin, white bloom; flesh tender, melting; flavor fruity-labrusca, becoming strongly foxy at late maturity. Early ripening. Cluster: large; conical; loosely formed, usually winged. Vine: vigorous; productive; resists foliage diseases like Beta; very good for jams.


**Esprit.** -Orig. in Osceola, Wis., by Elmer Swenson. Introd. in 1984. Plant pat. 5716, 15 Apr. 1986; assigned to Swenson Smith Vines, Inc. Edelweiss × Villard Blanc; tested as E.S. 422. Berry: large; skin white. Cluster large. Suitable for both fresh and wine use. Vine: productive; ripens in midseason, with Seyval; winter hardy to −28C.


**Joyous.** -Orig. in Cincinnati, Ohio, by Byron T. Johnson. Introd. in 1982. Mercidal × Delicatessan; tested as selection 64.Z2-2. Berry: slipskin; seeded; red to dark red; medium-large; round; pulp tender, juicy. Clusters compact, medium-large, often with shoulder; borne three per shoot. Vine: very vigorous; growth habit open, with few laterals; moderately productive; drought tolerant; disease and insect resistant. Very late ripening: requires very long, hot growing season to ripen properly. Produces a light muscat wine of golden color, resembling Gewurztraminer.

**Kay Gray.** -Orig. in Osceola, Wis., by Elmer Swenson. Introd. in 1981. Plant pat. 4943, 16 Nov. 1982; assigned to Swenson Smith Vines. ES 217 (Minn. 78 × Golden Muscat) open-pollinated (Onaka is probable pollen parent); tested as ES 1-63. Berry: medium; skin white to golden; mild fruity labrusca flavor; seeded. Cluster small. For fresh fruit use, or used for wine. Vine: Excellent disease resistance,
especially to downy mildew; early ripening; productive, but limited by small cluster size; extremely hardy, better than Beta; primarily used as a home table grape.

**Kee-Wah-Din.** -Orig. in Cincinnati, Ohio, by Byron T. Johnson. Introd. in 1982. OSBU × Baco Noir; tested as selection 64.B-2. Berry: medium-small; skin blue-black, round. Cluster medium-large; four per shoot. Vine: vigorous; productive; self-fruitful; very cold hardy. Best adapted to Minnesota, Wisconsin, Northern Michigan, and regions with similar climate. Produces red wine resembling Baco Noir.

**Lacrosse.** -Orig. in Osceola, Wis., by Elmer Swenson. Introd. in 1983. (Minn. 78 × Seibel 1000) × Seyval; tested as E.S.294. Berry: medium; skin white. Clusters medium. Produces excellent, fruity non-labrusca wine. Vine: vigor medium; very productive; good disease resistance; tolerates 2,4-D; very winter hardy, ripens earlier than Seyval.


**Mars.** -Orig. in Fayetteville, Ark., by James N. Moore, Univ. of Arkansas. Introd. in 1985. Island Belle × Ark. 1339 (a complex hybrid derived from Buffalo, Alden, Ontario, Ribier, Russian Seedless, Vergennes, and Zinfandel); selected in 1975; tested as Ark. 1508. Plant pat. pending. Berry: seedless; medium-large; round; skin blue, non-адherent, medium thick, flavor resembles Campbell’s Early. Clusters medium, cylindrical, well-filled. Vine: productive; vigorous; may bear fruit precociously. Resistant to black rot, anthracnose, powdery mildew, and downy mildew. Recommended for home gardens and limited commercial use.


**Pam.** -Orig. in Brooks, Ga., by W.G. Ison. Introd. in 1988. 5-11-3 × Senoia. Plant pat. pending. Female muscadine. Berry: large, to 31 mm; skin superior bronze color; dry scar; 21% solids; very good flavor; uniform ripening in midseason. Clusters large, long. Vine: vigorous, productive, disease resistant.

**Pineapple.** -Orig. in Brooks, Ga., by W.G. Ison. Introd. in 1988. Fry × Senoia. Plant pat. pending. Self-fertile muscadine. Berry: medium-large, up to 28 mm; skin bronze; wet scar; 21% solids; good flavor, somewhat similar to pineapple. Cluster large. Vine: very vigorous; very productive; disease resistant.

**PreCal™ (Sugrasix).** -Orig. in Bakersfield, Calif., by John Weinberger and Timothy Sheehan, Superior Farming Co. Introd. in 1987 as Sugrasix. Plant pat. 6009, 8 Sept. 1987; assigned to Superior Farming Co. Ribier > Superior Seedless; tested as 20-5. Fruit: size variable; skin purplish-black, seedless, with medium-size vestigial seed traces; ovate; flesh greenish, translucent, juicy, firm; most nearly resembles Ribier; ripens about with Flame Seedless. Cluster: medium; double-shouldered, tapering; good berry attachment. Vine: medium vigor; medium productive.


**Saint Croix.** -Orig. in Osceola, Wis., by Elmer Swenson. Introd. in 1981. Plant pat. 4928, 9 Nov. 1982; assigned to Swenson Smith Vines, Inc. ES 283 (Minn. 78 × Seibel 1000) × ES 193 (Minn. 78 × Seneca); tested as ES 2-3-21. Berry: medium; skin blue; very juicy. Cluster medium. Useful for neutral, high-quality red wine. Vine: Very hardy, but not as hardy as Kay Gray; vigorous; good resistance to black rot, leaves susceptible to downy mildew; very precocious.

**Saint Pepin.** -Orig. in Osceola, Wis., by Elmer Swenson. Introd. in 1983. Plant pat. 5771, 22 July 1986; assigned to Swenson Smith Vines, Inc. (MN78 × Seibel 1000) × Seyval; tested as E.S.282. Female bunch grape. Berry: medium; slipskin; skin white; flesh tender; pink juice; resembles Lacrosse. Produces an excellent German-style white wine; also has good dessert quality. Cluster: large; conical; loose. Vine: very vigorous; very productive; earlier ripening than Lacrosse; slightly less hardy than Lacrosse.

**Saturn.** -Orig. in Fayetteville, Ark., by James N. Moore, John R. Clark, and Justin R. Morris. Introd. in 1989. Dunstan 210 (Blackrose × Aurelia) × NY 45791 (Bath × Himrod); selected in 1974; tested as Ark. 1448. Plant pat. 6703; Berry: seedless; large; oval; skin bright red, aromatic; texture firm, crisp; sweet and fruity; mild flavor; good in storage. Clusters medium-large, conical. Vine: ripens midseason; productive, may require cluster thinning; medium vigor; moderate resistance to black rot, powdery mildew, and anthracnose; susceptible to downy mildew; vines have withstood -23°C with minimal injury in Ark.

**Scioto.** -Orig. in Cincinnati, Ohio, by Byron T. Johnson. Introd. in 1982. America × Westfield, tested as selection 64.AA-1. Berry: medium; oblate; skin dark blue-black; flavor resembles raspberries, labrusca-type. Ripens late midseason. Cluster medium; with shoulder; medium shank. Vine: vigorous; productive; healthy. Introduced as juice and jelly grape for southern Ohio.

**Simone.** -Orig. in Summerland, B.C., by A.G. Reynolds, L.C. Denby, and M. Bouthillier, Agriculture Canada Research Sta. Patricia × Himrod; selected in 1971; tested as Summerland Sel. 375 and under the provisional name Sovereign Charter. Berry: medium; orbicular; skin dark blue, thin; non-slipskin; seedless; mildly labruscana flavor; moderately crisp texture. Cluster: medium-large (265-300 g); well-filled; conical; winged; slight tendency to shatter in some years. Vine: very vigorous. Recommended for divided canopy culture; winter hardiness similar to Okanagan Riesling. Resistant to powdery mildew.


g; cylindrical; shouldered; slightly loose. Vine: highly productive; vigor moderate to high, best when grown with cordon training on a divided canopy; winter cold hardiness better than Okanagan Riesling, but less than Marechal Foch. Resistant to powdery mildew.


**Sugarbush.** -See Black Imperial™.

**Sugarvite.** -See Early Superior Seedless™.

**Sugarrix** -See PreCal™.


**Sweet Jenny.** -Orig. in Brooks, Ga., by W.G. Ison. Introd. in 1986. 11-2-2 x 12-12-1. Female muscadine. Berry: large, 30-35 mm; skin bronze; 24% solids. Ripens early to midseason. Cluster large. Vine: vigorous and productive; subject to angular leaf spot.

**HYBRID BERRY**

**Hugh Daubeny**

**Lincoln Logan.** -Orig. in Lincoln, New Zealand, by H.K. Hall, M.H. Quazi, and R.M. Skirvin, Crop Res. Division, DSIR, Christchurch. Introd. in 1986. A tissue culture-derived genetically thornless (nonchimeral) sport of Thornless Loganberry. Fruit: color, flavor and texture indistinguishable from Thornless Loganberry. Plant: morphologically similar to Thornless Loganberry; primocanes vigorous, green, prickly- (thorn-) free: produces only thornless shoots from roots. Seedling populations include both thorned and thornless offspring.

**Malling Sunberry.** -Orig. in East Malling, Kent, England, by E. Keep, J.H. Parker, and V.H. Knight, Inst. of Hort. Research (East Malling Research Sta.), Introd. in 1981. *Rubus ursinus* x selfed tetraploid sport of Malling Jewel; cross made in 1967; tested as EM 2143/9. Fruit: medium-large, similar to Loganberry; very dark red, glossy; blunt conical; ripens early July until mid-August; excellent fresh flavor; canning quality fairly good; flavor and color after thawing good, but drip loss high. Moderately easy to pick, although sometimes concealed by large leaves on the lateral; plug (receptacle) remains with fruit when picked. Plant: canes very vigorous with short leafy laterals; productive.

**Tummelberry.** -Orig. in Invergowrie, Scotland, by D.L. Jennings, Scottish Crop Res. Inst. Introd. in 1983. Tayberry x SHRI 69102/18 (a sibling of Tayberry); tested as SHRI 73153C4. Fruit: medium-large; short conical; skinless purple and more red-purple than Tayberry; flavor slightly acid without aromatic characteristics of Tayberry; ripening over along period starting in July, a week later than Tayberry, and finishing a week later than Tayberry; plug (receptacle) remains with fruit when picked. Plant: vigorous; sturdy canes produced in moderate to large numbers, spreading to semi-erect, but slightly more erect than Tayberry; yields slightly more than Tayberry in season that followed a severe winter and slightly less in a season that followed a mild winter; fruiting laterals about 30 cm long and display fruit well. Primocanes dark green with anthocyanin pigments less intense than in Tayberry; dense, moderately sized prickles. Susceptible to raspberry leaf and bud mite.

**MAYHAW**

**Big Red (No. 1 Big).** -Orig. near Sandy Hook, Miss., by T.O. Warren, Hattiesburg. Introd. in 1969. Chance seedling of *Crataegus aestivalis* discovered in Pearl River swamps. Fruit: large to very large, usually 2.5 cm; oval; skin brilliant red, glistening finish; flesh mixed white and red; soft; high soluble solids; ripens late April to early May in South. Tree: very vigorous; upright spreading; not precocious; very productive; susceptible to rust. Northern limits not yet defined, but appears to be hardy in zone 5.

**NECTARINE**

**David W. Cain, R.E.C. Layne, and Wayne Sherman**

**Brendavilha.** -Orig. in New South Wales, Australia, by John Christie. Introd. in 1985. Sport of Maravilha peach. Registered in N.S.W. Fruit smaller, higher percent red blush, and rounder than Maravilha. Fruit subject to surface cracks. Other fruit, tree, and foliage characters resemble Maravilha.


**Crimson Star™ (Sunnecteleven).** -Orig. in Fresno, Calif., by John H. Weinberger. Introd. in 1982. Plant pat. 4942, 16 Nov. 1982; assigned to Superior Farming Co. Open-pollinated seedling of an unnamed late-ripening nectarine; selected in 1977; tested as 87-101. Fruit: compared to Fantasia, slightly smaller, more ovate, with less-prominent apex tip; skin bright red on yellow ground color, medium thick; flesh yellow with red streaks next to pit; freestone. Ripens 1 week after Summer Grand. Tree: vigor medium; upright-spreading; productive. Flowers: large, showy, pink.


**Early Sun.** -Orig. in Del Rey, Calif., by Tom Chamberlin, H.P. Metzler & Sons. Introd. in 1990. Unknown parentage. Fruit: large; round, skin bright red on yellow ground color; flesh yellow, firm; ripens with May Grand. Tree: vigorous, productive.

**Fire Diamond.** -Orig. by Norman G. and Lowell G. Bradford, Le Grand Calif. Introd. in 1989. Early Diamond x unnamed genetic dwarf peach. Plant pat. 7064, 5 Dec. 1989; assigned to Bright’s Nursery, LeGrand. Fruit most nearly resembles Early Diamond. Fruit: small, uniform; gobose; skin dark red 75% to 90% on orange-yellow ground color; flesh yellow, medium firm; semi-freestone; mild subacid. Susceptible to skin cracking and to blossom brown rot in wet years. Ripens with Mayfire at Le Grand, 3 weeks before Early Diamond. Tree: vigor medium; size medium; spreading; very productive; regular production. Blossoms purplish red. Leaves mostly reddish brown from midsummer to dormancy.

**Fresno Sun.** -Orig. in Del Rey, Calif., by Tom Chamberlin, H.P. Metzler & Sons. Introd. in 1990. Unknown parentage. Fruit: large; round, skin bright red on yellow ground color, smooth, waxy; flesh yellow, firm; ripens just before Firebrite. Tree: vigorous, productive.

**Garden Delight.** -Orig. in Modesto, Calif., by Floyd Zaiger. Introd. in 1975. Second generation seedling of Red Grand nectarine x Flory Dwarf peach. Plant pat. 4155, Nov. 25, 1975; owner by Zaiger’s Genetics. Fruit: medium; gobose; skin yellow overspread with red; flesh yellow, firm; flavor good, subacid. Tree: non-vigorous; spreading; productive.

**Harblaze.** -Orig. in Harrow, Ont., by R.E.C. Layne, agr. Canada Res. Sta. Introd. in 1989. Stark Delicious x Hardsired. Cross made in 1973; selected in 1978; tested as HW104. Fruit: skin 90% bright red blush over yellow-orange ground color; larger and rounder than Nectarred 2; flesh yellow, firm, freestone; good flavor. Ripens 3 days after Nectarred 2. Tree: vigorous; productive; equally bud-hardy and wood-hardy with Redhaven. Flowers: showy, pink. Leaf glands
prominent tip; medium; skin scarlet on yellow ground color; medium melting, excellent eating quality; freestone. In central California, ripens about with Early Sun Grand. Tree: vigorous medium; upright-spreading; productive. Flowers: large, showy, pink.

**Summer Bright.** -Orig. in LeGrand, Calif., by Norman G. and Lowell G. Bradford. Introd. in 1987. Red Diamond nectarine x unnamed peach seedling. Plant pat. 7049, 24 Oct. 1989; assigned to Bright’s Nursery, LeGrand. Fruit most nearly resembles Red Diamond. Fruit: large; globose to slightly oblong; skin 75% to 90% deep red on reddish-orange ground color; finish very smooth; flesh yellow, very firm; clingstone; excellent flavor, good sugar/acid balance. In central California, ripens 18 days after Red Diamond, 5 days before Fantasia. Tree: very vigorous; spreading; very productive; hardy in central California. For long-distance shipping.

**Summer Diamond.** -Orig. in LeGrand, Calif. by Norman G. Bradford. Introd. in 1984. Red Diamond open-pollinated. Plant pat. 5654, 4 Feb. 1986; assigned to Bright’s Nursery, LeGrand. Fruit resembles Red Diamond. Fruit: medium; slightly oblong; skin dark red on orange-yellow ground color; finish smooth and shiny; flesh yellow, very firm; flavor good; freestone; pit cavity larger than desired. In central California, ripens with Fantasia. Tree: medium vigor; spreading; production medium to heavy; hardy in central California. For long-distance shipping.

**Summer Star** (Sunectwelve). -Orig. in Fresno, Calif., by John H. Weinberger. Introd. in 1985. Plant pat. 5473, 21 May 1985; assigned to Superior Farming Co. Open-pollinated seedling of Fantasia; selected in 1977; tested as 90-110. Fruit: most nearly resembles Fantasia, with which it ripens, but skin has more red blush and better yellow ground color; rounder and more uniform; fewer cleft sutures; large, 75 mm; flesh yellow, with some red near stone; firm, melting; good eating quality. Tree: vigor medium; upright-spreading; productive.

**Sundollar.** -Orig. in Agr. Exp. Sta., Univ. of Florida, Gainesville, by PC. Andersen, W.B. Sherman and R.H. Sharpe. Introd. in 1982. Sunlite x Armqueen, cross made in 1978; released in 1982; tested as 2-4N. Fruit: medium when properly thinned, round, with no significant tip and smooth suture; skin 80% red blush; flesh yellow; melting, good firmness; relatively nonbrowning; semi-clingstone. Ripens 90 days after bloom. Flowers showy, leaf glands reniform. Tree: moderately vigorous; productive; semi-upright, but responds well to pruning to open center; sets moderate to high number of fruit buds; self-fertile. Resistant to bacterial leaf spot. Chilling requirement: 250 chill units.


**Sungem.** -Orig. at Byron, Ga., by W.R. Okie, USDA S.E. Fruit & Tree Nut Res. Lab. Introd. in 1989. F. open-pollination of Red King nectarine; seed collected in 1979 by V.E. Prince; selected in 1982; tested as BY80N384. Fruit: medium; skin attractive red blush on greenish-white ground color; round, flesh white, melting, freestone; flavor very good, high acidity. Ripens 2 weeks after Snow Queen, 1 week after Redhaven. Released to provide a firmer white nectarine for local sales and mid-range shipping. Flowers showy, self-fertile; leaf glands reniform; moderately resistant to bacterial spot. Chilling requirement about 850 h, making it adapted to most of the Southeast.

**Sunprincess.** -Orig. at Byron, Ga., by W.R. Okie, USDA S.E. Fruit & Tree Nut Res. Lab. Introd. in 1989. F. open-pollination of Red King nectarine; seed collected in 1979 by V.E. Prince; selected in 1982; tested as BY80N384. Fruit: medium; skin attractive red blush on greenish-white ground color; round, flesh white, melting, freestone; flavor very good, high acidity. Ripens 2 weeks after Snow Queen, 1 week after Redhaven. Released to provide a firmer white nectarine for local sales and mid-range shipping. Flowers showy, self-fertile; leaf glands reniform; moderately resistant to bacterial spot. Chilling requirement about 850 hours, making it adapted to most of the Southeast.

**Sunstar** (Sunectwelve). -Orig. in Fresno, Calif., by John H. Weinberger and Timothy Sheehan. Introd. in 1988. Plant pat. 6158, 26 Apr. 1988; assigned to Superior Farming Co. S#3 x Flamekist; selected 1978; tested as 181-119. Fruit: very large, 77 mm in diameter; round; skin dark red on yellow ground color; flesh yellow with red at pit, firm, melting, freestone; ripens 7-10 days after Flamekist, which it most nearly resembles. Tree: medium vigor; upright-spreading; very productive; regular bearing; blossoming midseason. Flowers large, showy, pink. Useful for late-season shipping markets, for which the freestone characteristic is important.

**Sunbright** (Sunectwelve). -Orig. in Fresno, Calif., by John H. Weinberger. Introd. in 1982. Plant pat. 4927, 9 Nov. 1982; assigned to Superior Farming Co. Open-pollinated seedling of Summer Grand; selected in 1977; tested as 83-50. Fruit most nearly resembles Summer Grand; compared to Early Sun Grand, morerounder, smoother, with less prominent tip; medium; skin scarlet on yellow ground color; medium thickness; flesh yellow, mottled with red next to pit, fine texture, melting, excellent eating quality; freestone. In central California, ripens with Fantasia. Tree: medium vigor; semi-clingstone; medium productive. Flowers: large, showy, pink.

**Sungem.** -Orig. at Byron, Ga., by W.R. Okie, USDA S.E. Fruit & Tree Nut Res. Lab. Introd. in 1989. F. open-pollination of Red King nectarine; seed collected in 1979 by V.E. Prince; selected in 1982; tested as BY80N384. Fruit: medium; skin attractive red blush on greenish-white ground color; round, flesh white, melting, freestone; flavor very good, high acidity. Ripens 2 weeks after Snow Queen, 1 week after Redhaven. Released to provide a firmer white nectarine for local sales and mid-range shipping. Flowers showy, self-fertile; leaf glands reniform; moderately resistant to bacterial spot. Chilling requirement about 850 hours, making it adapted to most of the Southeast.

**Sunstar** (Sunectwelve). -Orig. in Fresno, Calif., by John H. Weinberger and Timothy Sheehan. Introd. in 1988. Plant pat. 6158, 26 Apr. 1988; assigned to Superior Farming Co. S#3 x Flamekist; selected 1978; tested as 181-119. Fruit: very large, 77 mm in diameter; round; skin dark red on yellow ground color; flesh yellow with red at pit, firm, melting, freestone; ripens 7-10 days after Flamekist, which it most nearly resembles. Tree: medium vigor; upright-spreading; very productive; regular bearing; blossoming midseason. Flowers large, showy, pink. Useful for late-season shipping markets, for which the freestone characteristic is important.

**Sunbright** (Sunectwelve). -Orig. in Fresno, Calif., by John H. Weinberger. Introd. in 1982. Plant pat. 4927, 9 Nov. 1982; assigned to Superior Farming Co. Open-pollinated seedling of Summer Grand; selected in 1977; tested as 83-50. Fruit most nearly resembles Summer Grand; compared to Early Sun Grand, more rounded, smoother, with less prominent tip; medium; skin scarlet on yellow ground color; medium thickness; flesh yellow, mottled with red next to pit, fine texture, melting, excellent eating quality; freestone. In central California, ripens with Fantasia. Tree: medium vigor; semi-clingstone; medium productive. Flowers: large, showy, pink.
suture or tip; skin 100% red blush; flesh yellow, firm, smooth-textured, relatively nonbrowning, semi-freestone; quality medium. Ripens 90 days from bloom. Petals large, pink, showy; leaves dark red (homezygous); leaf glands reniform. Intended for dooryard and landscape purposes. Chilling requirement: 300 chill units. Leaves and fruit highly resistant to bacterial leaf spot.

**Superstar™ (Sunetteight).** -Orig. in Fresno, Calif., by John H. Weinberger. Introd. in 1981. Plant pat. 4894, 12 Oct. 1982; assigned to Superior Farming Co. Open-pollinated seedling of Summer Grand; selected in 1978; tested as 84-55. Fruit: large; color brighter than either Sun Grand or Flavortop, with which it ripens; ovate; flesh yellow streaked with red at pit, firm, melting; excellent flavor; freestone. Most nearly resembles Summer Grand. Tree: medium vigor; productive. Flowers: large, showy, pink. Well suited for commercial shipping.

**Tasty-Gold.** -Orig. in Modesto, Calif., by Floyd Zaiger. Introd. in 1986. Ruby Gold x a peach seedling from the Early Sun Grand x Royal Gold cross. Plant pat. 5623, 7 Jan. 1986; assigned to Zaiger’s Genetics. Fruit: large; globose; skin yellow overspread with red; flesh dark yellow, firm; mild subacid. Tree: vigorous; productive; chilling requirement 800-1000 h.

**ROOTSTOCKS FOR NECTARINES**

J. N. Cummins and Tom Beckman


**Flordaguard.** -See under Peach. Compatible with all nectarine varieties tested.

**GF 53.7.** -See under Peach. Compatible with many, but not all, nectarine varieties.

**Hansen 536.** -See under Almonds.

**Hansen 2168.** -See under Almonds.

**Ishitara.** -See under Plums. Compatible with Summergrand; further compatibilities not yet determined. Semi-dwarfing.

**Jaspi.** -See under Plums. Compatible under Fuhalode and Nectared 6; not tested under other varieties. Reduces tree by about 20% compared to peach seedling.

**Julior.** -See under Peach. Compatible with nectarines. Medium vigor.

**Mr.S.2/5.** -See under Peach. Compatible with all varieties tested.

**Myran.** -See under Peach. Compatible with nectarine.

**Nemared.** -See under Peach. Compatible with nectarine.

**PEACH**

Jerry Frecon, Wayne Sherman, and David Cain


Fruit: large; nearly globose; skin yellow ground color overspread with red; flesh golden yellow, medium firm; mild flavor. Tree: vigorous; productive.

**Andergen.** -See Stark® Sensation.


**August Sun.** -Orig. in Del Ray, Calif., by Tom Chamberlain, H.P. Metzler & Sons. Introd. in 1983. Plant pat. 5140, 15 Nov. 1983; licensed exclusively to Agri Sun Nursery. Open-pollinated seedling of O’Henry. Fruit: about 75 mm; skin color red on yellow ground color; round, flesh yellow, freestone. Ripens 55 days after Redhaven in Selma, Calif. Tree: vigorous; very productive; chilling requirement 350-500 h.

**Bellaire.** -Orig. near Martinsburg, W. Va., by Freddie Blair. Introd. in 1985. Discovered in 1977; tested as FB-244. Sport of Loring and similar to Loring except for ripening 10 days earlier. Fruit: medium to large; skin brilliant red blush on yellow-orange ground, little pubescence; round; flesh clear yellow, non-browning; very firm; excellent quality. Tree: vigorous; easily trained; leaves resistant to bacterial spot; hardiness similar to that of Redhaven.


**Bounty.** -Orig. at USDA Appalachian Fruit Research Station, Kearneysville, W. Va., by R. Scorza, H.W. Fogle, L.E. Gilrete, K. Patton, E.W. Neunendorf, and W.R. Okie. Introd. in 1988. [Haltera O.P.] × Redskin] × (Loring × [(Hiley × Fireglow)× Fireglow]). Fruit: large (usually 65-75 mm, but can reach 100 mm); round; skin 30% to 80% red blush on yellow ground color; flesh yellow, non-browning, firm, freestone; flavor excellent. Ripens uniformly, about 16 days after Redhaven. Good cropping after natural freezes of -21C to -28C. Tree vigorous; flower bud production 1.25 times that of Redhaven. Resistant to bacterial leafspot under normal disease pressure; moderately susceptible under epiphytotic conditions. Chilling requirement = 800 h.

**Cassie.** -Orig. in Modesto, Calif., by Floyd Zaiger. Introd. in 1980. O’Henry open-pollinated. Plant pat. 4571, 15 July 1980; assigned to Zaiger Genetics. Fruit: medium to large; pubescence medium; flesh yellow, firm, good flavor, freestone. Ripens 35 days after Redhaven at Modesto, 25 days after Redhaven in New Jersey. Tree vigorous; upright. Chilling requirement 800-1000 h.

**Chan (Extra, Extra Fancy).** -Orig. in Sutter Co., Calif., by Ronald Chan, Yuba City. Introd. in 1984. Bud sport of Andross, Plant pat. 5710, 8 Apr. 1986; assigned to Fowler Nurseries, Newcastle, Calif. Fruit most resembles Halford; large; symmetrical; skin color golden yellow, almost luminous; flesh golden yellow; firm; sweet but mild flavor; clingstone. For commercial canning. Ripens 5 days before Loadaf. Tree: moderate vigor; highly productive; spreading; hardy in southern Calif.

**Clendining.** -See Jon Boy.

David Sun. -Orig. in Del Ray, Calif., by Tom Chamberlain, H.P. Metzler & Sons. Introd. in 1985. Plant pat. 5874, 10 Feb. 1987; assigned to Metropolitan Ins. Co.; licensed exclusively to Agri Sun Nursery. Parentage unknown. Fruit: large, 70-75 mm; round; skin fully red on yellow ground; flesh yellow, semi-freestone; no split pits; ripens with Gemfree, 10 days before Redhaven in Selma, Calif. Good shipper. Tree: very vigorous; very productive. Chilling requirement about 300 h.


Diamond Princess. -Orig. in LeGrand, Calif., by Norman G. and Lowell G. Bradford. Introd. in 1988. Red Diamond nectarine × unnamed peach seedling. Plant pat. 7066, 5 Dec. 1989; licensed exclusively to Bright’s Nursery, Le. Grand, Calif. Fruit mostly nearly resembles RedTop. Fruit: large; uniform; globose; skin color 75% to 95% deep solid red on yellowish pink ground color; flesh yellow, very firm; semi-clingstone; light pubescence; excellent flavor with good sugar/acid balance. Ripens 3 days after RedTop in California. Tree: very vigorous; very productive; regular bearing; spreading; hardy in central California. For long-distance shipping.


Early Maycrest. -Orig. in Reedeley, Calif., by Ron Toewe. Plant pat. 6229, 26 July 1988; licensed exclusively to Riesner Nursery. Limb mutation of Maycrest. Fruit: medium to large; skin blushed red on golden yellow ground; flesh yellow, firm, clingstone; globose; most nearly resembles Queencrest. Ripens 20 days before Redhaven in California. Extra, Extra Fancy. -See Chan.

Fireprince. -Orig. at USDA S.E. Fruit & Tree Nut Res. Lab., Byron, Ga. Introd. by W.R. Okie. [(Hal-Berta × Fireglow) × Redglobe] × [(Sunlight × Southland) × Redcap]; cross made in 1964 by V.E. Prince; selected in 1966; tested as FV5-1942 and BY5-1942. Fruit: large; skin attractive red on yellow ground color, light pubescence; flesh yellow, melting, freestone. Ripens about 10-12 days after Redhaven; released to fill the gap between Harvester and Redglobe. Flowers showy, self-fertile; leaf glands reniform; moderately resistant to bacterial spot. Chilling requirement about 850 h, making it adapted to most of the Southeast.


Goldprince. -Orig. at Byron, Ga., by W.R. Okie, USDA S.E. Fruit & Tree Nut Res. Lab. Introd. in 1989. Loring × [(Fairhaven × FV89-14) × (FV89-14 × Duke of Georgia)]; FV89-14 is an F2 of (Hiley × Fireglow) × Fireglow. Cross made in 1966 by V.E. Prince; selected in 1970; tested as FV7-1240 and BY7-1240. Fruit: medium; skin attractivered, light pubescence; flesh melting, clingstone. Ripens with Junegold, 3 weeks before Redhaven. Better shape and color and fewer split pits than Junegold, which it replaces. Flowers showy, self-fertile; leaf glands reniform; moderately resistant to bacterial spot. Chilling requirement about 650 h, limiting its adaptation to the lower Southeast.


Haig Arabelian, Sr. -Orig. near Modesto, Calif., by Haig Arabelian, Jr. Seedling of unknown parentage. Parent plant 6230, 26 July 1988; assigned to Burchell Nursery. Fruit: medium to large, typically about 65 mm; globose, symmetrical; skin light red over 15% of surface on light yellow ground color; flesh bright yellow with no red around pit; nonmelting; flavor good, well-balanced; clingstone. Ripens last week of July at Modesto. Tree: vigorous; upright-spreading; very productive; regular production; hardy under typical San Joaquin Valley conditions. Leaf glands globose, small, light green, darkening with age. Flowers small, non-showy, abundant. Released for commercial canning.

Harmon. -See So More.
Harrow Diamond - Orig. at Harrow, Ont., by R.E.C. Layne, Agriculture Canada Research Station. Introd. in 1984. Redskin × Harbinger; tested as HW213. Fruit: medium, to 60mm when properly thinned; skin color solid, bright red blush over 60% to 70% of surface on bright yellow ground color; pubescence short and sparse; flesh yellow, nonbrowning, melting, medium firm, moderately sweet and juicy; freestone when fully ripe; free of split pits. Fruit ripens 1 day before Candor and Earlired. Pit deeply sculptured; medium; plump; withouttwings. Flowers showy, pink, midseason. Tree: vigor medium; productive; open-spreading, with medium to wide crotch angles; tolerant to Leucostoma canker; resistant to bacterial spot and brown rot. Wood and fruit buds are winter hardly like Redhaven; full crops were produced after exposure to -26 and -28°C.

Hawthorne. - Orig. at Calhoun, La., by C.E. Johnson, W.A. Young, J.E. Boudreaux, W.J. Bourgeois, F.J. Peterson, and P.W. Wilson, Louisiana Agr. Expt. Sta. Introd. in 1990. Open-pollinated seedling of L1-27-13, an OP selection of L9-10-40, which was selected from OP Southern Glow; selected in 1976; tested as L73-A10-10. Fruit: large, 70 mm; skin 90% red over medium yellow ground; flesh yellow, with some red near pit, firm, good texture, freestone; nearly round, with non-proliferous suture. Ripens in late June at Calhoun, midway between Harvester and LaFeliciana. Flowers large, showy, self-fertile. Leaf glands reniform. Tree: vigorous, productive; no bacterial spot has been observed on fruit and relatively little on leaves. Chilling requirement 500-600 h at 7C or colder.


Jayhaven. - Orig. at South Haven, Mich., by Stanley Johnston, Michigan State Univ. Introd. in 1976 by R.L. Andersen, J.E. Moulton, T.M. Thomas, and H.J. Belter. SH333 [Redhaven × SH1171 (Halehaven O.P.)] × SH348 (Ambergem OP); selected in 1965; tested as SH467. Fruit: medium; round; uniform; skin 80% red blush over golden-yellow ground color, pubescence sparse; flesh clear yellow, very firm, freestone; quality commercially acceptable. Ripens with Glohaven, 10 days after Redhaven. Tree: vigorous medium; upright; spreading; productive. Flower bud hardness similar to that of Redhaven. Blossoms non-showy. Tolerant of bacterial spot. Ripens 10 days earlier with much more red skin color. Fruit: large; firm; semi-freestone. Tree: vigorous; productive; resistant to bacterial leaf spot.

July Sun. - Orig. in Del Ray, Calif., by Tom Chamberlain, H.P. Metzler & Sons. Introd. in 1983. Plant pat. 5139, 15 Nov. 1983; assigned to Metropolitan Insurance Co.; licensed exclusively to Agri Sun Nursery. Open-pollinated seedling of July Lady. Fruit: very large, up to 100 mm; skin medium red on bright yellow ground; round; flesh yellow, freestone. Ripens 12 days after Redhaven in New Jersey, 20 days after Redhaven in Selma, Calif. Tree: very vigorous; very productive. Chilling requirement about 350 h.


June Sun. - Orig. in Del Ray, Calif., by Tom Chamberlain, H.P. Metzler & Sons. Introd. in 1987. Plant pat. no. 5873, 3 Feb. 1987; owned by Metropolitan Insurance Co.; licensed exclusively to Agri Sun Nursery. Unknown parentage. Fruit: large, up to 85 mm; round; skin dark red on yellow ground, flesh yellow, freestone. Ripens with or just ahead of Redhaven in Calif. Tree: very vigorous; very productive; upright. Chilling requirement about 300 h.


Juneprince. - Orig. at Byron, Ga., by W.R. Okie, USDA S.E. Fruit & Tree Nut Res. Lab. ([Sunhigh × Southland) × Redcap] × Junegold; cross made in 1963 by V.E. Prince; selected in 1966; tested as FV4-3751 and BY4-3751. Fruit: large; skin attractive red on yellow ground color, pubescence light; flesh melting, freestone. Ripens 5-7 days before Redhaven; released to replace Coronet. Flowers showy, self-fertile; leaf glands absent; leaf margin serrate. Moderately resistant to bacterial spot. Chilling requirement about 650 h, limiting its use to the lower Southeast.


La Festival. - Orig. at Idlewild Research Station, Clinton, La., by J.E. Boudreaux, C.E. Johnson, P.L. Hawthorne, W.A. Young, R.L. Cunningham, M.G. Cartgite, T.J. Raiford, F.J. Peterson, and P.W. Wilson. Introd. in 1985. Open-pollinated seedling of La Feliciana; selected in 1983; tested as L71-A73-3. Fruit: medium to large; skin 80% bright red over medium yellow ground; spherical; flesh yellow with red flecks; firm; very good flavor. Ripens midway between Harvester and La Feliciana. Tree: vigorous; productive. Leaves and fruit resistant to bacterial spot. Chilling requirement 400-500 h.


Lady Nancy. - Orig. near Hammonton, NJ., by Medio DeMarco, De Marco Orchards. Introd. in 1989. Plant pat. 7069, 12 Dec. 1989; assigned to Adams Co. Nursery and Burchell Nursery. Limb sport of Jerseyqueen. Fruit: large to very large; shape globose to ovate; not symmetrical; skin 75% scarlet red, on greenish-white ground color; flesh white, firm, with yellow suture line through the flesh; excellent quality; ripens with Jerseyqueen, before Rio Oso Gem. Excellent storage characteristics. Tree: similar to Jersey Queen; very vigorous; large; open-spreading; production regular.

LaJewel. - Orig. in Calhoun, La., by C.E. Johnson and W.A. Young. Introd. in 1988. Redglobe × Prairie Rose. Cross made in 1959; selected in 1962; tested as L-9-6-4. Fruit: medium to large, up to 76 mm; skin medium red over 40% of surface, ground color deep yellow; pubescence short; flesh yellow; firm; freestone; occasionally flesh at stem end separates from stone. Ripens about 15 days after Elberta. Flowers: showy; rose; self-fertile; tolerant of spring frosts. Leafglands reniform. Tree: vigorous; productive; resistant to bacterial spot; no tendency to sunscald or cold damage. Chilling requirement about 850 h below 7.2°C.

May Sun. -Orig. in Del Ray, Calif., by Tom Chamberlain, H.P. Metzler & Sons. Introd. in 1989. Plant pat. 6992, 22 Aug. 1989; owned by Metropolitan Insurance Co.; licensed exclusively to Agri Sun Nursery. Parentage unknown. Fruit: large; about 3.5 inches; round; skin medium red on bright yellow ground; flesh yellow, clingstone; ripens 25 days before Redhaven in Selma, Calif. Tree: very vigorous; very productive. Chilling requirement about 300 h.


Newhaven. -Orig. at South Haven, Mich., by Stanley Johnston, Michigan State Univ. Introd. in 1978 by R.L. Andersen, J.E. Moulton, T.M. Thomas, and H.J. Belter. Open-pollinated SH371 (Redhaven × Fairhaven); selected in 1962; tested as SH4415. Fruit: medium-large; roundish oblong; skin 70% bright red over golden-yellow ground color; flesh clear yellow, non-browning, very firm, freestone; flavor excellent. Ripens 5-7 days after Redhaven. Tree: vigor medium; spreading; productive. Leaf glands reniform. Flower bud hardness similar to that of Redhaven. Blossoms non-showy. Considerably more tolerant than Redhaven to bacterial spot.


Queencrest. -Orig. in Reedeley, Calif., by Leo and Rosalie Balakian, Reedeley, Calif. In 1986. Plant pat. 6025, 29 June 1987. Bud sport of Maycrest; tested as B41871. Fruit: medium to large; round; skin red-blushed on golden ground color; flesh yellow amber, firm, clingstone; flavor sweet, not acid. Ripens 20 days before Redhaven in California. Good shipper. Tree: vigorous and productive for an early season.


Scarletpearl. -Orig. at Byron, Ga., by W.R. Okie. USDA S. E. Fruit & Tree Nut Res. Lab. Introd. in 1989. (Biscoe × Redgold nectarine) open-pollinated; seed collected in 1980, selected in 1983; tested as BY81P1411. Fruit: medium; skin attractive red blush on greenish white ground color, light pubescence; shape round; flesh white, melting; clingstone. Flavor is typical of other early-season peaches. Ripens with June Gold, 3 weeks before Redhaven. Flowers showy, self-fertile; leaf glands globose; moderately resistant to bacterial spot. Chilling requirement about 750 h, making it adapted to most of the Southeast. Released to provide a firmer white peach for local sales and mid-range shipping.
O.P.) × Crosby; selected in 1965; tested as SH448. Fruit: medium-small, requiring heavy thinning; round, skin brilliant 90% red-striped blush over bright yellow ground color; pubescence short; flesh clear yellow, semicling; few split pits; flavor superior for its season. Ripens with Garnet Beauty, 14 days before Redhaven. Tree: vigorous medium; spreading; leaf glands globose. Flower buds harder than those of Redhaven. Blossoms non-showy. Slightly more tolerant than Redhaven to bacterial spot.

**TAMU Denman.** -Orig. at Stephenville, Texas, by J.W. Worthington, J.S. Newman, and J. Lasswell, Texas A&M Univ. Res. & Ext. Center. Introd. in 1984. Redglobe open-pollinated; selected in 1962. Fruit: mostly 55-70 mm if well-thinned; skin color attractive red blush on 75% to 100% of surface; medium pubescence; round, flesh yellow, fine-textured, excellent flavor; very firm; freestone. Small pit. Harvest about 1 week after Loring. Tree: vigorous; upright-spreading, easily trained to open center; highly branched, producing large quantities of fruiting wood. More resistant to bacterial spot than is Redglobe. Abundant bud set and extended bloom period has reduced crop failure from late spring frosts.

**Tasty Zee.** -Orig. in Modesto, Calif., by Floyd, Gary, and Grant Zaiger and Leith Gardner, Modesto, Calif. Introd. in 1988. O’Henry × Giant Babcock. Plant pat. 6409, 22 Nov. 1988; owned by Zaiger Genetics. Fruit: medium to large; globose; attractive, 80% red; pubescence medium; flesh white, very firm, good flavor, free to semi-freestone. Ripens about 18 days after Redhaven in New Jersey. Tree: vigorous; upright-spreading. Chilling requirement 800-1000 h.

**Texstar.** -Orig. in College Station, Texas, by D.H. Byrne and J.S. Kamas. Introd. in 1984. Parentage unknown; selected in 1973 by H.H. Bowen; tested as TAES M9. Distributively Foundation Seed Services, Texas AES. Fruit: moderately large (57-68 mm); skin attractive red blush over 40% of surface; pubescence moderate; flesh yellow, firm, good flavor and texture, semi-freestone; round to oblong with no prominent suture or tip when sufficient chilling has been received; good storage life. Ripens about with Junegold, 45 days before Elberta. Tree: vigorous; productive; heavy thinning required to size fruit. Susceptible to peach leaf curl; no observation of bacterial leaf spot. Leaf glands reniform. Flowers: showy; bloom date 6 days after June-gold. Chilling requirement about 550 h below 7.2°C.


**ValleGrande.** -Orig. in Weslaco, Texas, by R.E. Rouse and D.H. Byrne. Introd. in 1990. Bud mutation of Earligrande, discovered in 1983; tested as RGV-83-1. Fruit: compared to Earligrande, larger (120 g). more highly blushed (60% to 75% red) and 5-7 days later ripening; round, flesh yellow, moderately firm, fine-textured, slightly red next to pit, resistant to browning; semi-freestone. Tree: vigorous; productive; leaf glands globose; flowers non-showy. Susceptible to rust; assumed to be moderately tolerant to bacterial leaf spot as is Earligrande. Chilling requirement 250 chilling units; will set and mature a crop with less chilling, but flowering and foliation will be delayed 5-10 days.

**Valley Gem.** -Orig. by Paul E. Hansche, Univ. of California, Davis. Introd. in 1989. Cal Red × A54P455 (a brachytic dwarf selection from the late Fred Anderson). Plant pat. 6976, 8 Aug. 1989; assigned to Regents of Univ. of California. Fruit: medium; fairly regular in shape, slightly oblong; skin covered 80% to 100% with deep red blush on bright yellow ground; flesh medium to moderate orange yellow with occasional short radiating red lines near pit; very firm; freestone; sweet with mild subacid flavor; excellent eating quality. Ripening relatively uniform, 10-12 days after O’Henry at Davis. Tree: brachytic dwarf, not expected to exceed 2 m on standard rootstock; very precocious and very productive; blooms about 1 week earlier than standard cultivars. Flowers showy, profuse.

**Valley Red.** -Orig. by Paul E. Hansche, Univ. of California, Davis. Introd. in 1989. A high-quality standard peach, 11.7-15, × A54P455 (a brachytic dwarf selection from the late Fred Anderson). Plant pat. 6671. Assigned to Regents of Univ. of California. Fruit: medium; nearly spherical; skin covered 80% to 100% with deep red blush on bright golden ground; flesh medium to golden yellow with little or no red; firm; sweet with mild subacid flavor; very good eating quality. Ripening relatively uniform, about 2 weeks before O’Henry at Davis. Tree: brachytic dwarf, not expected to exceed 2 m on standard rootstock, very precocious and very productive; blooms about 1 week earlier than standard cultivars. Flowers showy, profuse.

**Valley Sun.** -Orig. by Paul E. Hansche, Univ. of California, Davis. Introd. in 1989. 11.5-19-a (a high-quality standard peach) × A50P620 (a brachytic dwarf selection from the late Fred Anderson). Plant pat. 6912, 11 July 1989; assigned to Regents of Univ. of California. Fruit: medium; nearly spherical; skin covered 80% to 100% with deep red blush on bright golden ground; flesh medium to golden yellow with little or no red; very firm; freestone; sweet with mild subacid flavor; very good eating quality. Ripening relatively uniform, slightly later than O’Henry at Davis. Tree: brachytic dwarf, not expected to exceed 2 m on standard rootstock; very precocious and very productive; blooms about 1 week earlier than standard cultivars. Flowers showy, profuse.

**White Lady.** -Orig. in Modesto, Calif., by Floyd, Gary, & Grant Zaiger and Leith Gardner and Leith Gardner, Modesto, Calif. Introd. in 1986. O’Henry × Giant Babcock × May Grand) × Sam Houston Plant pat. 5821, 9 Dec. 1986; owned by Zaiger Genetics. Fruit: medium to large; skin highly colored; pubescence medium; flesh white, very firm, high-quality, low acid, mild-flavored. Ripens 5 days after Redhaven in N.J. Tree vigorous; upright-spreading. Chilling requirement 800-1000 h.

**Zee Lady.** -Orig. in Modesto, Calif., by Floyd, Gary, & Grant Zaiger and Leith Gardner and Leith Gardner, Modesto, Calif. Introd. in 1986. O’Henry × June Lady. Plant pat. 5832, 16 Dec. 1986; owned by Zaiger Genetics. Fruit: large; skin full red; pubescence medium; round; flesh yellow, very firm, very good flavor; freestone. Ripens 35 days after Redhaven in Calif, 30 days after Redhaven in New Jersey. Tree: vigorous; upright-spreading. Chilling requirement 800-1000 h.

ROOTSTOCKS FOR PEACHES
Tom Beckman and J.N. Cummins

Arimag. -See Cadaman®.

Cadaman® (Arimag). -Orig. jointly at INRA Fruit Research Station, Pont-de-la-Maye, France, and GDFVDEA, Budapest, Hungary. Introd. in 1989. Selected from across of Prunus persica × P. davidiana made by I. Gergely (GDFVEA); tested as No. 41-4-21. A clonal rootstock propagated by softwood and semi-hardwood cuttings and by in vitro techniques. Very vigorous in early years, then stabilizing when production begins. Compatible with all varieties of peaches and almonds. Tolerance to waterlogging better than GF 677; similar productivity and tolerance to root-knot nematodes. On the unbudded tree, flower showy, light pink; fruit small, freestone.

Citation. -Orig. in Modesto, Calif., by Floyd Zaiger. Introd. in 1982. Open-pollinated seedling of Red Beaut (presumed plum × peach hybrid); tested as 4-G-816. Plant pat. 5112, dated 29 Apr. 1982; owned by Zaiger Genetics. A red leaved, precocity-inducing clonal rootstock compatible with most peach varieties. Reduces tree size by about 40% to 50%. Readily propagated by hardwood and softwood cuttings. Recommended for use only with virus-free scions. Induces very early maturation of wood and very early leaffall. The unbudded tree is an attractive ornamental, with showy pink flowers that are mostly female-sterile. Leaf glands globose.

Damas GF 1869. -Orig. at Pont-de-la-Maye, near Bordeaux, France, at INRA Fruit Res. Station. Open-pollinated Damas de Tourlouse; selected in 1945; introd. in 1955. Putative parent P. spinosa. A clonal rootstock compatible with most peach varieties, but incompatible with Babcock, Fairway, Redwing, Summer Pearl, Sunnyside, and several European varieties. Semi-vigorous, producing tree somewhat smaller than one on peach rootstock. Intermediate productivity index. More tolerant than peach roots on poorly drained soils. Propagated readily by softwood and hardwood cuttings. Suckers profusely.

Fereley. -See Jaspis®.

Ferdor. -See Julior®.


GF 43. -See under Plums. Compatible with many peach varieties; very vigorous.


GF 305. -Orig. at Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard, INRA Fruit Research Station. Selected in 1940 from seedling population of local peach variety of Montreuil near Paris. Introd. in 1950. A high-vigor seedling rootstock. Used as plant indicator for viruses. Susceptible to crown gall, root-knot and lesion nematodes, and waterlogging. Flower pink, non-showy; fruit white-fleshed, freestone.

GF 557. -Orig. at Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard, INRA Fruit Research Station. Introd. in 1955. An open-pollinated seedling of Shalil selected in 1945. A presumed peach × almond hybrid. A very vigorous clonal rootstock rarely producing suckers. Ease of propagation similar to GF 677. Resistant to chlorosis and Meloidogyne incognita. Susceptible to crown gall and very susceptible to waterlogging. On the unbudded tree, flower pale pink, showy; fruit freestone, dehiscent at maturity.

GF 677. -Orig. near Lot-et-Garonne in southwestern France. Natural hybrid of peach × almond; discovered in 1938 by Siloret and Souty; selected in 1939 by R. Bernhard and Ch. Grasselly. Introd. in 1965; UPOV no. 692; assigned to Agri Obtention, Guayancourt, France. Very vigorous, making a tree 10% to 20% larger than tree on peach rootstock, high productivity index. A clonal rootstock difficult to propagate by conventional methods; readily amenable to micropropagation. Susceptible to Meloidogyne, but high vigor makes it suitable for replant situations. Tolerant of high lime concentration in soil. Sensitive to root asphyxia. As unbudded tree, flower small, showy, pale pink, fruit freestone.

Hansen 536. -Compatible; see under Almonds.

Hansen 2168. -Compatible; see under Almonds.

Higama. -Orig. at Pont-de-la-Maye, near Bordeaux, France, by Ch. Grasselly, INRA Fruit Research Station. Introd. in 1970. Selected in 1960 from mixed lot of peach seedlings received from Japan. Tested as S-2543. Seed-propagated; very vigorous rootstock. Tolerant to Meloidogyne incognita. Very susceptible to lime-induced chlorosis. As unbudded tree, flower pale pink, showy; leaf glands reniform; fruit white-fleshed, freestone.

Ishatas®. -See under Plums. Semidwarfing. Compatible with Springcrest and Merrill O’Henry; further compatibilities not yet determined. Productivity and fruit size are enhanced.

Jaspi® (Fereley). -See under Plums. Compatible with Redhaven, Merrill O’Henry, Springtime and a number of French varieties. Reduces tree size by about 20% compared with peach seedling stocks. Induces very good productivity. Excellent anchorage; no suckers.

Julior® (Ferdor). -Orig. at Pont-de-la-Maye, near Bordeaux, France, by Ch. Grasselly, INRA Fruit Research Station. Selected in 1965 from St. Julien (Prunus insititia) × Pershore (P. domestica). Introd. in 1988. A clonal rootstock moderately easy to propagate by hardwood cuttings; very amenable to micropropagation. Confers very high vigor. Tolerant of waterlogging and crown gall. Induces medium vigor; almost no suckers. Susceptible to chlorosis at pH above 8. On unbudded tree, flower white, small, showy; fruit yellow skin, freestone.

Mirabili®. -See under Plums. Compatible with some peach varieties.

Montclar® (Chanturgue). -Orig. at Pont-de-la-Maye, near Bordeaux, France, by Ch. Grasselly, INRA Fruit Research Station. Local peach seedline, tested as S-2489. Seedling rootstocks are very vigorous, very uniform. More resistant to chlorosis than most peach seedling lines. Susceptible to root-knot nematodes. As unbudded tree, flowers pink, showy; fruit white-fleshed freestone.

Mr.S.2/5. -Orig. at Pisa, Italy, by F. Scaramuzzi, Univ. of Pisa. Open-pollinated myrobalan; pentaploid, presumed to be Prunus cerasifera × P. spinosa. Readily propagated-by cuttings and by layering. Compatible with all peach and nectarine varieties tested. Compared to Damas GF 1869, which it most resembles, similarly tolerant of waterlogging, similar vigor, more productive; produces very few suckers. As unbudded tree, flowers white, mostly female sterile; no thorns; vigorous.

Myran (Yumir, PPH). -Orig. in Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard and Ch. Grasselly, INRA Fruit Research Station. Introd. in 1988. Belsiana plum (P322, probably Prunus cerasifera × P. salicina) × Yumir peach S1058. UPOV registration #2116. When used as a rootstock under peach, slightly more vigorous than peach seedlings. Compatible with all peach and nectarine varieties tested. Productive moderate during early years, improving as tree matures. Propagated by semi-hardwood cuttings. More resistant than peach and peach × almond to Armillaria mellea; tolerant to Meloidogyne arenaria, M. javanica, and M. incognita; susceptible to Pratylenchus vulnus. Tolerant of alkaline soils to pH 8. More resistant to root anoxia than are peach roots. As au unbudded tree, flower pale pink, non-showy, sterile; vigorous.

Nemared. -Orig. at Fresno, Calif., by J.H. Weinberger, USDA; introd. in 1983 by D.W. Ramming. An F5 derivative from Nemaguard × a red-leaved seedling of Tennessee Natural. Tested as P115-95. A very red-leaved seedling rootstock. More tolerant of Meloidogyne incognita than M. javanica, but in Nemaguard. In the nursery, liners produce fewer side branches and can be budded earlier than Nemaguard. Pissy. -Not compatible under peaches.
PEAR

Cascade. -Orig. at Medford, Ore., by F.E. Reimer, Southern Oregon Expt. Sta. Max Red Bartlett × Comice. Plant pat. 6245, 9 Aug. 1988; assigned to Carlton Plants. Fruit: large; skin dark red blush on yellow ground; texture similar to Bartlett; excellent dessert quality; susceptible to limb rub. Matures late in Bartlett season; keeps well in refrigerated storage for 6-8 months. Tree: vigorous; upright; mature trees crop regularly. Blooms just after Bartlett; Bartlett, Bose, and Comice are suitable pollinants.

Daves’s Delight. -Orig. at Kentville, Nova Scotia, by A.D. Crowe, Agriculture Canada Research Station. Beierschmidt × Bartlett. Fruit: medium to below medium; pyriform, slightly irregular to ribbed, skin yellow, up to 50% washed with attractive bright red; many inconspicuous lenticels; flesh light cream, very fine and buttery, nearly free of grit cells; flavor aromatic, equal to or better than Bartlett. Early maturing, with Buere Gifford; holds well on or off tree with good resistance to core breakdown. Tree: vigorous; relatively precocious and productive. Released as a dessert pear; processing qualities not known.


Warren. -Originated at Hattiesburg, Miss., by T.O. Warren as chance seedling. Introd. in 1976. Fruit: medium to large; shape variable; skin dull brown, sometimes with red blush, smooth; flesh whitish, buttery, smooth, moderately firm; flavor comparable to Magnis or Comice; ripens about with Magnis; stores much better than Bartlett. Tree: vigorous; pyramidal, with flat crotch angles; cold hardy; tolerant of high summer temperatures; resistant, but not immune, to fire blight; disease-free foliage.

ROOTSTOCKS FOR PEARS

OHxF Series (Brooks Selections). -Orig. near Forest Grove, Ore., by Lyle A. Brooks from seed obtained at Agriculture Canada Research Station, Summerland, B.C. Old Home × Farmingdale. From several thousand seedlings, Brooks, M.N. Westwood, and P. Lombard selected and evaluated in the orchard >5000 candidates. Thirteen have been introduced commercially; all are resistant to fire blight, pear decline, and woolly pear aphids; they produce no or few suckers; propagation (with difficulty) is by hardwood cuttings. The Brooks Selections are compatible with Pyrus communis varieties and appear to be compatible with Asian pear varieties. Patented clones are assigned to Carlton Plants; all carry the “Brooks Selection®” trademark.

OHxF 18 - Vigorous.


OHxF 51. -Dwarfing, but less so than EM Quince A. only moderately winter hardy.


OHxF 97. -Vigorous. Induces early, heavy production.


OHxF 266. -Semi-dwarfing.

OHxF 304. -Vigorous.

OHxF 305. -Vigorous.


OHxF 733 - Intermediate vigor. Induces early, heavy production. Fruit may be slightly smaller than from trees on OHxF 69.}

OHxF 514. -Vigorous. OHxF 16. -Vigorous.

PLUM

G. Tehrani, W. R. Okié and David W. Cain

Alder man. -Orig. in Excelsior, Minn., by W.H. Alderman, Hort. Res. Center, Univ. of Minnesota. Introd. in 1985 by J.J. Luby, W.H. Alderman, S.T. Munson, D.K. Wildung, W.H. Gray, and E.E. Hoover. Burbank × Old; cross made in 1937; tested as MN 416. Fruit: large, 40-50 mm wide and 50-60 mm long; skin burgundy-red with little or no bloom; flesh bright golden-yellow; sweet; quality excellent; clingstone. Ripens 1 week later than Superior or Toka. Tree: precocious; vigorous; round-headed; spreading; winter hardy; self-fruitful; pollinized by Toka or South Dakota.

Anna Sun. -Orig. in Del Rey, Calif., by Tom Chamberlin, H.P. Metzler & Sons. Introd. in 1986. Parentage unknown. Plant pat. 6077, 5 Jan. 1988; licensed exclusively to Agri Sun Nursery, Selma, Calif. Fruit: resembles Kelsey; large; slightly elongated; skin medium green, smooth, flesh yellowish-green, slightly crisp; ripens 3 weeks after Kelsey. Tree: vigorous; productive; apparently self-fruitful.

Austrian Giant. -Orig. in Modesto, Calif., by Floyd, Gary, and Grant Zaiger and Leith Gardner. Introd. in 1986. King David × Roysum. Plant pat. 5624, 7 Jan. 1986; assigned to Zaiger’s Genetics. Fruit: very large, 65 mm; globose; skin yellow ground color covered by red blush; flesh yellow, firm; flavor mild. Tree: vigorous; upright; productive.

Au-Amber. -Orig. at Auburn Ala., by J.D. Norton, Auburn Univ. Introd. in 1988. Parents are siblings of double backcross of Starcher No. 1 (a native selection at least partly Prunus angustifolia) to Methley; cross made in 1965; selected in 1975; tested as Methley 12-10. Fruit: medium; skin reddish-purple; flesh amber, moderately firm; high quality. Ripens 3-4 weeks before Santa Rosa, 1 week before Methley. Tree: vigorous on peach rootstock; spreading; resistant to bacterial spot and bacterial canker; tolerant of plum leaf scald; suscepti-
able to black knot. Chilling requirement about 650 h. Adapted to the humid Southeast for local sales. Flowers large, self-inferfite; blooms about 4 days before Santa Rosa.

**AU-Cherry**. -Orig. at Auburn, Ala., by J.D. Norton, Auburn Univ. Introd. in 1988. Parents are siblings of double backcross of Starcher No. 1 (a native selection at least partly *Prunus angustifolia*) to Methley; cross made in 1965; selected in 1975; tested as Methley C-50. Fruit: small; skin dark red; flesh dark red, moderately firm, good quality. Ripens with Santa Rosa and up to 10 days later. Resistant to bacterial spot, bacterial canker and black knot; tolerant of plum leaf scald. Chilling requirement 700-700 h. Adapted to the humid South-east for local sales and backyardgrowers. Flowers large, self-inferfite; blooms about with Santa Rosa.

**AU-Rosa**. -Orig. at Auburn, Ala., by J.D. Norton, Auburn Univ. Introd. in 1988. Parents are siblings of double backcross of Starcher No. 1 (a native selection at least partly *Prunus angustifolia*) to Methley; cross made in 1965; selected in 1975; tested as Santa Rosa A-5. Fruit: large; skin red, flesh amber, firm, highquality. Ripens a few days after Santa Rosa. Tree: vigorous and upright on peach rootstock; moderately resistant to bacterial spot and bacterial canker; tolerant of plum leaf scald and brown rot. Chilling requirement about 750 h. Better adapted to the humid Southeast than Santa Rosa, which it replaces. Flowers large, self-inferfite; blooms with Santa Rosa.

**AU-Rubrum**. -Orig. at Auburn, Ala., by J.D. Norton, G.E. Bohyan, D.A. Smith, and B.R. Abrahams, Dept. of Horticulture and Ala. Agr. Expt. Sta., Auburn Univ. Introd. in 1988. Bud mutation of Crimson; tested as Crimson M-1. Fruit: large, 60 mm diameter, compared to 4.2 for Crimson; skin scarlet red; flesh dark red, moderately firm, clingstone. Excellent eating quality; canned quality acceptable, but not equal to AU-Amber. At Auburn, fruit matures about 1 week after Methley, 5 weeks before Crimson; stores well at OC. Tree: more vigorous than Crimson; spreading; productive; dark green foliage. Chilling requirement about 700. Resistant to *Pseudomonas syringae*, *Xanthomonas pruni*, and *Apipiospora morbosa*; tolerant of plum leaf scald and brown rot. Flowers large, self-inferfite; blooms 2 days before Santa Rosa.

**Black Diamond** (*Suplumeleven*). -Orig. in Fresno, Calif., by John H. Weinerberger. Introd. in 1982. Plant pat. 4902, 26 Oct. 1982; assigned to Superior Farming Co. Open-pollinated seedling of Angeleno (most probably pollinated by Midsomer). Fruit: large, 60 mm diameter; round, skin black, smooth finish, inconspicuous suture, medium thick; flesh red, medium firm; semi-freestone; excellent eating quality; mostly resembles Queen Ann. In central California, ripens 1 week before Queen Ann. Tree: medium vigor; very productive; average precocity; upright; midseason blossoming; Angeleno is suitable pollinator.

**Black Flame** (*Suplumflame*). -Orig. in Fresno, Calif., by John H. Weinerberger. Introd. in 1985. Plantpat. 5487, 4 June 1985; assigned to Superior Farming Co. Open-pollinated seedling of Simka; tested as 295-198. Fruit: large, 60-65 mm; globose; skin dark purple; flesh yellow, firm, clingstone. In central California, ripens about 3 weeks after Simka, which it most nearly resembles. Very productive; regular bearer. Tree: medium vigorous; upright; late-blossoming; Black Torch is suitable pollinizer.

**Black Jewel**. -Orig. at Fresno, Calif., by J.M. Garabedian. Introd. in 1987. Plant pat. 5905, 17 Mar. 1987. Chance seedling; Japanese type. Fruit: large; 60 mm diameter; round, skin black, smooth finish, inconspicuous suture, medium thick; flesh red, medium firm; semi-freestone; excellent eating quality; mostly resembles Queen Ann. In central California, ripens 1 week before Queen Ann. Tree: medium vigor; very productive; average precocity; upright; midseason blossoming. Black Torch is suitable pollinizer.


**Broken Heart**. -Orig. at Visalia, Calif., by Frank A. Vieira. Introd. in 1988. Plant pat. 6118, 1 Mar. 1988; assigned to L.C. and E.E. Huer, Reedley, Calif. Fruit: medium. 58 mm wide and 58 mm long; broad, coredate; skin greenish yellow with heavy gray bloom; flesh yellowish-orange near the skin surface to lighter orange in and around the cavity, firm, meaty; quality excellent; semi-freestone; in central California, ripens second week of August. Tree: precocious; productive; vigorous.

**Byrongold**. -Orig. at Byron, Ga., by J.M. Thompson, USDA S.E. Fruit&Tree Nut Res. Lab. Introd. in 1985. Open-pollinated seedling of BY68-87; BY68-87 = (*Gaviota* × *Oxart Premier × Prunus angusti-* folia) open-pollinated; seed collected in 1973; selected in 1976; tested as BY7401-5. Fruit: large; skin golden yellow; round; flesh yellow, firm, semi-freestone; good quality. Ripens 3 days after Ozark Premier, 12 days after Santa Rosa. Tree: very vigorous on peach rootstock; spreading; very resistant to bacterial spot and bacterial canker; tolerant of plum leaf scald and brown rot. Flowers large, three or four per cluster; mostly self-incompatible; blooms about 3 days before Santa Rosa. Adapted to the humid Southeast.

**Catalina**. -Orig. in California by Walter Krause. Introd. in 1982. Angeleno open-pollinated. Japanese type. Fruit: large; round; skin dark purple with waxy bloom; flesh amber, very firm, outstanding flavor. In central California, ripens 710 days before Friar. Tree: very vigorous; very productive; not as hardy as Friar.

**Celebration**. -Orig. in Koelehnof, South Africa, by M.A. Oosthuizen and Jan Stadler. Fruit and Fruit Tech. Res. Inst., Stellenbosch. Introd. in 1989. An open-pollinated seedling of Songold (most probably pollinated by Eldorado). Fruit: size same as Sungold; round to oblate; skin black with heavy bloom; flesh deep yellow to orange, semi-melting; juicy; pit medium to large, clingstone; quality similar to Eldorado. Ripens a week later than Sungold. Tree: compact; upright, similar to Santa Rosa; self-unfruitful, pollinated by Harry Pickstone and with same bloom date.

**Double x French Prune**. -Sport of Petitie. Fruit European type: large; skin dark blue; flavor rich, sweet. Very good for drying, long-distance shipping. Tree productive; hardy. Partially self-fruitful.

**Ebone Sun**. -Orig. in Del Rey, Calif., by Tom Chamberlin, H.P. Metzler & Sons. Introd. in 1986. Parentage unknown. Plant pat. 6153, 19 Apr. 1988; licensedexclusively to Agri Sun Nursery, Selma, Calif. Fruit: large; slightly elongated; skin black, smooth; flesh yellow, crisp, firm. In central California, ripens mid-August. Tree: moderately vigorous, productive when provided good pollination.


**Gar Jumbo**. -Orig. in Fresno, Calif., by J.M. Garabedian. Introd. in 1987. Plant pat. 5903, 17 Mar. 1987. Chance seedling; Japanese type. Fruit: large to very large, 60 mm wide and 58 mm long; globose, symmetrical, uniform; skin medium red to dark maroon to mahogany red with blue-grey bloom; semi-freestone. In central California, ripens with Autumn Rosa. Tree: productive; vigorous.


**Howard Sun**. -Orig. in Del Rey, Calif., by Tom Chamberlin, H.P. Metzler & Sons. Introd. in 1986. Parentageunknown. Plantpat. 6006, 8 Sept. 1987; licensed exclusively to Agri Sun Nursery, Selma, Calif. Fruit: resembles Friar; large; round; skin very dark blue to reddish-blue; flesh amber yellow, mild, sweet, excellent texture; ripens 1 week before Angeleno; excellent storage and shipping qualities. Tree: productive.
Mid Red. -Orig. in Modesto, Calif., by Floyd, Gary, and Grant Zaiger and Leith Gardner. Introd. in 1986. Casselman limb sport × King David. Plant pat. 5744, 13 May 1986; assigned to Zaiger’s Genetics. Fruit: large, 65 mm; slightly elongated; skin red on yellow ground color; flesh yellow, firm; flavor mild subacid. Tree: vigorous; upright; productive.


Milton Early Italian. -Orig. in Wenatchee, Wash., in the experimental plots of E.L. Reeves, USDA. A bud sport of Fellenberg (Italian Prune) selected in 1943 by S.M. Zeller; tested as E-76; introd. by Q.B. Zielinski and J.A. Milbrath in 1954. Identical with Fellenberg, except flowering is 4 or 5 days earlier, fruit maturity is 10-14 days earlier, and productivity is somewhat less.

October Sun. -Orig. in Del Rey, Calif., by Tom Chamberlin H.P. Metzler & Sons. Introd. in 1990. Parentage unknown. Plant pat. pending; licensed exclusively to Agri Sun Nursery, Selma, Calif. Fruit: resembles Casselman; medium to large; slightly elongated; skin red on yellow ground color; flesh yellow, juicy, sweet. In central California, ripens 10 days after Roysum. Tree: vigorous, productive.

Queensland Bellerossa. -Orig. in Applethorpe, Queensland, Australia, by B.L. Topp and D.M. Russell, Granite Belt Hort. Res. Sta. Introd. in 1988. Burbank × Santa Rosa. Cross made in 1979; selected in 1984; tested as BB22-10. Fruit: medium to large, 48 mm; oblong with pronounced suture; skin color 90% to 100% brightred at maturity, red at stone and near skin; juicy; flavor aromatic; skin slightly bitter. Ripens 11 days before Santa Rosa. Tree: vigorous; less upright than Santa Rosa; productive; flowers self-unfruitful; pollinated by Santa Rosa. Good levels of field resistance to bacterial spot (Xanthomonas campestris pv. pruni).

Royal Zee. -Orig. in Modesto, Calif., by Floyd, Gary, and Grant Zaiger and Leith Gardner. Introd. in 1985. Open-pollinated seedling of Royal Beau. Plant pat. 5486, 4 June 1985; assigned to Zaiger’s Genetics. Tested as 42-GA-1200. Fruit: large, 60-65 mm; skin overcolor bluish red; globose; flesh yellow, firm; mild flavor. Tree: medium; vigor; upright; productive. For local and long-distance marketing.

Rubyweet. -Orig. by Byron, Ga., by W.R. Okie, USDA S.E. Fruit & Tree Nut Res. Lab. Introd. in 1989. Mariposa × Methley. Cross made in 1968 by V.E. Prince; selected in 1973 by J.M. Thompson; tested as BY69-971. Fruit: medium; skin color changes from greenish-yellow to yellow red as it ripens; round; flesh yellowish-red, firm when green, clingstone; fair quality. Ripens 1 week after Santa Rosa, 10 days before Bruce. Tree: very vigorous on peach rootstock; spreading; very resistant to bacterial spot and bacterial canker; tolerant of plum leaf scald and brown rot. Adapted to the humid Southeast. Released for use as a green plum similar to Bruce. Flowers large, two per cluster; self-incompatible; blooms about 3 days before Santa Rosa.

Splugameleven. -See Black Diamond.

Splugamthirteen. -See Black Torch.

Splugamfourteen. -See Sweet Rosa.

Splugamfifteen. -See Black Flame.


Sweet Rosa™ (Splugamfourteen). -Orig. in Fresno, Calif., by John H. Weinberger. Introd. in 1984. Plant pat. 5342, 20 Nov. 1984; assigned to Superior Farming Co. Open-pollinated seedling of Angeleno (most probably pollinated by Midsummer); tested as 193-65. Fruit: 5-10 mm larger than Santa Rosa, which it most nearly resembles; skin red to purple, with prominent lenticels; more ovate than Santa Rosa; dark red flesh; medium firm to soft; clingstone. Fruits attain very high sugar levels; eating quality excellent. Tree: medium vigor; upright; medium productive; average precocity; midseason blossoming.

Voyageur. -Orig. in Vineland Station, Ont., by G. Tehrani, Hort. Res. Inst. of Ontario. Introd. in 1987. Open-pollinated seedling of Ruth Gerstetter; tested as V60322. Fruit: small, 39 mm wide and 44 mm long; elliptical; skin dark purple with bloom removed, violet purple with bloom intact; flesh yellow, firm, juicy; quality good; semiclingstone. Ripens in late August, 1 week later than California Blue. Tree: productive; precocious; semi-vigorous; as Stanley. Self-fruitful; tends to overbear and benefits from fruit thinning; good pollinizer for Bluebell, Early Blue, Fellenberg, and Verity. Resistant to European red mite; low susceptibility to black knot and bacterial canker. 

ROOTSTOCKS FOR PLUMS AND PRUNES

Tom Beckman and J. N. Cummins

Citation. -See under Peaches. Reduces tree size by about 25%.

Eruni. -Orig. in Balsgard, Sweden, by E. Olden, Swedish Univ. of Agr. Introd. in 1987 by V. Trajokowski. Open-pollinated Pershore; selected in 1952; tested as BPR 32. European plums on Eruni make medium to large, firm, precocious tree. Compatible with wide range of Prunus domestica varieties. Readily propagated by layers or by hardwood cuttings. Root system is similar to that of Myrobalan B. Ungrafted tree is upright, semi-vigorous.

Ferciana. -See Ishiarta®.

Fereley. -See Jaspi®.

GF 43. -Orig. at Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard and Ch. Grasselly, INRA Research Station. Introd. in 1967. Open-pollinated seedling of French Prune; UPOV #708, assigned to Agri Obtention, Guyancourt, France. Clonal rootstock for hexaploid plums and for peaches. Very vigorous, comparable to peach seedling stocks; compatible with very broad spectrum of P. domestica varieties. Readily propagated by hardwood cuttings. Resistant to lime-induced chlorosis. More tolerant to waterlogging than peach seedling stocks. Resistant to crown gall; more resistant than Brompton to Phytophthora; susceptible to apple chlorotic leafspot virus. Winter hardiness doubtful. On an un-budded tree, flowers are white, self-fertile; fruits are blue with yellow-green flesh.

GF 557. -See under Peach. Compatible with European and Japanese plum varieties.

GF 677. -See under Peaches. Incompatible with many varieties; compatible with Prune d’Ente, President, Imperial Epineuse, Fellenberg, and Coe’s Golden Drop.
GF 1869. - See under Peaches; compatible with plums and prunes.


Ishihara® (Ferciana, PPH). - Orig. in Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard, INRA Fruit Research Station. Introd. in 1986 under the trademark Ishihara®, Beltsiana plum x a natural plum-peach hybrid [F(322x871)]; cross made in 1950; tested as PPH, Semi-dwarfing rootstock for almond, apricot, peach, plums, and prunes. Compatible with broad range of P. domestica, including Althan, Oullins, and California Blue. For some European plan culivars, reduces tree size 15% to 20%; induces high productivity index and increased fruit size; scion foliage may be less intensely green than on other Stocks. Fruits of Reine Claude and French Prune on this rootstock are larger than when grown on Myrobolan B rootstocks. Non-suckering. Propagated readily as hardwood or semi-hardwood cuttings. Sensitivity to winter waterlogging similar to that of peach seedling, greater than Marianna GF 8-1; anchorage may be weak in such conditions. Tolerance to Armillaria mellea better than peach seedling stocks. Resistant to root-knot nematodes. As ungrafted tree, upright, precocious, well-anchored, partially female sterile; scarce fruits are intermediate between peach and plum, clingstone.

Jaspi® (Fereley). - Orig. at Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard, INRA Fruit Research Station. Introd. in 1989; UPOV applied for. Methley x Prunus spinosa (2069 x 1064). Compatible with European plums, including Reine Claude d’Althan, and most peaches and nectarines. Semi-dwarfing for French Prune, Reine Claude, and Mirabelle de Nancy. Induces earlier bearing and more efficient production than does Marianna GF 8-1. Anchorage excellent; no suckers are produced; good resistance to waterlogging; drought-tolerant; resistant to lime chlorosis. Readily propagated by hardwood cuttings and in micropropagation. In the nursery, liners are vigorous, produce no spines, and take the bud well. As an ungrafted tree, vigorous, semi-upright, few branches, no spines; rust resistant.

Marianna GF 8-1. - Orig. at Pont-de-la-Maye, near Bordeaux, France, by R. Bernhard, INRA Fruit Research Station. Introd. in 1965. Open-pollinated seedling of diploid Marianna; GF 8-1 is a triploid, probably derived by fertilization of an unreduced ovule by P. cerasifera. UPOV #698; assigned to Agri Obtention, Guyancourt, France. Very vigorous. Compatible with all varieties of European plums, although unions with California Blue and Althan Green Gage may be weak. Relatively shallow rooting; well-adapted to calcareous soils. More tolerant to root asphyxia than is myrobolan. Very sensitive to parthenocarpy and transpiration; no spines; semi-dwarfing; large; semi-upright; regular bloom. Very firm, freestone; tart. Ripens 2 weeks after Santa Rosa. Tree: vigorous; large; semi-upright; regular production.

Mirabi®. - Orig. at Pont-de-le-Maye, near Bordeaux, France, by Ch. Grassely, INRA Fruit Research Station. Introd. in 1980. Open-pollinated seedling of P2032 (Prunus cerasifera), selected in 1957. A medium-vigor clonal rootstock. Waterlogging tolerance better than peach seedlings. As ungrafted tree, flowers white, fruit small, 35 mm; round; skin red on yellow groundcolor; flesh yellow; clingstone; very vigorous, bushy.

Mirahi®. - Orig. at Pont-de-le-Maye, near Bordeaux, France, by Ch. Grassely, INRA Fruit Research Station. Introd. in 1980. Open-pollinated seedling of P2032 (Prunus cerasifera), selected in 1957. A medium-vigor clonal rootstock. Waterlogging tolerance better than peach seedlings. As ungrafted tree, flowers white, self-sterile; fruit clingstone.

Myran® (Yumir, PPH). - See under Peaches. Compatible with some, but not all, P. domestica.

Myrobalan GF 31. - See under Apricots. Compatible with most plums and prunes.

Pixy. - Orig. in Maidstone, Kent, U.K., by A.B. Beakbrane. Introd. in 1975. Open-pollinated Prunus insititia; seed collected in France in 1947; tested as E.340.4.6. Semi-dwarfing rootstock for European plums. Propagated by hardwood cuttings or layers. Trees on Pixy are precocious; productive, but fruit size smaller than usual; almost free from suckering. Very sensitive to drought. As unworked plant, resistant to bacterial canker and to silver leaf.

PPH. - See Ishihara®.

St. Julien GF 655-2. - See under Peaches. Compatible with most Prunus domestica varieties.


Yumir. - See Myran®.

BY69-1637P. - Orig. at Byron, Ga., by J.M. Thompson, USDA S.E. Fruit & Tree Nut Res. Lab. Released in 1985. Open-pollinated seedling of BY4-997 x seedling apricot; BY4-997 = Nubiana open-pollinated. Seed collected in 1968; selected in 1973. Fruit: large; skin dark purple-black, very light pubescence; round; flesh apricot colored, very firm, freestone, tart. Ripens 2 weeks after Santa Rosa. Tree: vigorous on peach rootstock, upright; moderately productive. Moderately resistant to bacterial canker and bacterial spot; tolerant of plum leaf scald and brown rot. Adapted to the humid Southeast. Flowers large, pink, solitary, self-fertile; fertile with both plum and apricot. Released for breeding purposes because of tree health, fruit size, and fertility with both plum and apricot.

Flavor Delight. - Orig. in Modesto, Calif., by Floyd, Gary, and Grant Zaiger and Leith Gardner. Introd. as a home garden variety in 1989. Apricot x plumcot. Plant pat. 7090, 2 Jan. 1990. Fruit: medium; skin dull yellow; flesh yellow, firm, freestone, with good sugar/acid balance; flavor delicate; high sugar, with 4° Brix higher than standard cultivars; early maturing. Tree: vigorous; large; semi-upright; regular production.

Flavor Supreme. - Orig. at Modesto, Calif., by Floyd, Gary, and Grant Zaiger and L.M. Gardner. Introd. as a home garden variety in 1989. An interspecific plum x plumcot hybrid, from a cross between two open-pollinated seedlings of Red Beauty. Plant pat. 6763, 25 Apr. 1989. Fruit: medium; 50-56mm wide and 53-56 mm long; globose to slightly flattened at stem end; skin violet brown to purplish gray with moderate to heavy bloom; flesh deep red, firm, moderately juicy; quality excellent; clingstone; ripens 13-20 June. Suitable for long distance shipping. Tree: precocious and productive; semi-vigorous; upright.

RASPBERRY

Hugh Daubeny


Amity. - Orig. in Corvallis, Ore., by F.J. Lawrence, released jointly by USDA-ARS Ore. Agr. Exp. Sta. and Wash. Agr. Res. Center. Selected in 1976. Introd. in 1984. ORUS 1839 (Fallred x ORUS 1347) x ORUS 1835 (PI 338908 x Heritage) (PI 338908 is an East Malling selection 791/45 derived from Malling Landmark and Rubus occidentalis); tested as ORUS 2036. Fruit: medium; uniform shape; very firm; skin fairly dark red, ease of separation from receptacle varies and can be rather difficult under cooler weather conditions; good fresh market and processing qualities. Fruit produced on primocanes in August; ripens up to 7 days earlier than Heritage in the Pacific Northwest. Plant: moderate yielder, slightly less than Heritage over the entire season; primocanes vigorous, glabrous, nonwaxy, green with purple overlay; scattered pale purple prickles that are not objectionable; fruiting laterals medium to short length. Some resistance to root rot; susceptible to pollen transmission of raspberry bushy dwarf virus and to the North American aphid vector of raspberry mosaic virus; cane diseases and winter hardness are not considered since the primocanes are usually removed after fruiting.
Centennial. -Orig. in Puyallup, Wash., by P.P. Moore, T.M. Sjulin, B.H. Barritt, and H.A. Daubeny, Washington State Univ. Introd. in 1989. Meeker × Skeena; cross made by H.A. Daubeny in 1974, selected by B.H. Barritt in 1978; tested as WSU 738. Fruit: large; long conic shape; skin bright, glossy, medium red; pleasant, mild flavor; medium firm; suitable for fresh market and processing; separates with some difficulty from receptacle and thus not suited to machine harvesting; ripening season similar to Meeker, several days later than Willamette and Skeena; relatively susceptible to pre- and postharvest rots. Plant: yields similar to Meeker; more upright habit than Meeker, but less upright than Skeena; long, strong fruiting laterals. Primocanes not numerous; vigorous; pubescent; numerous dark purple, moderately soft prickles, susceptible to spur blight, cane Botrytis, cane spot, brown rot, and an unusually high incidence of Eutypa lata infection from recipient. Primocanes yielder similar to Willamette; upright growth habit, but laterals tend to droop because of large numbers of fruits. Primocanes reasonably numerous, fairly upright, glabrous, non waxy; purple prickles largely restricted to basal portions; floricanes erect, reddish to yellow brown with basal cracking. Susceptible to cane Botrytis, cane spot and crown gall; some resistance to spur blight, root rot, and to pollen transmission of raspberry bushy dwarf virus; resistant to the North American aphid vector of raspberry mosaic virus; some resistance to postharvest rots. Plant: very high yielder; vigorous and fairly upright, yellow-brown with basal cracking. Susceptible to cane Botrytis, cane spot and crown gall; some resistance to spur blight, root rot, and to pollen transmission of raspberry bushy dwarf virus; resistant to the North American aphid vector of raspberry mosaic virus; winter hardy in the Pacific Northwest.

Chilliwack. -Orig. in Vancouver, B.C., by Hugh Daubeny, Agr. Canada Res. Sta. Introd. in 1987. BC 64-10-198 (Summer × Carnival) × Skeena; cross made in 1974; selected in 1978; tested as BC 74-10-41. Fruit: large; conic; skin medium red, glossy; firm; drupelets numerous; high soluble solids; excellent fresh eating quality; suitable for processing; separates readily from receptacle and thus well-suited to machine harvesting; ripens several days later than Skeena and Willamette, some resistance to pre- and postharvest rots. Plant: moderate yielder similar to Willamette; upright growth habit with long, strong fruiting laterals. Primocanes numerous, erect, glabrous, and non waxy; purple prickles largely restricted to basal portions; floricanes erect, reddish to yellow brown with basal cracking. Susceptible to cane Botrytis, cane spot and crown gall; some resistance to spur blight, root rot, and to pollen transmission of raspberry bushy dwarf virus; resistant to the North American aphid vector of raspberry mosaic virus; winter hardy in the Pacific Northwest.

Comox. -Orig. in Vancouver, B.C., by Hugh Daubeny, Agr. Canada Res. Sta. Introd. in 1987. BC 64-9-81 (Creston × Willamette) × Skeena; cross made in 1974; selected in 1978; tested as BC 74-12-42. Fruit: very large; conic; skin medium red; firm; drupelets numerous; good fresh eating quality; suitable for processing; fairly easy separation from receptacle and can be machine-harvested; ripens several days later than Willamette and Skeena; some resistance to pre- and postharvest rots. Plant: very high yielder; vigorous and fairly upright growth habit, but laterals tend to droop because of large numbers of fruits. Primocanes reasonably numerous, fairly upright, glabrous, non waxy; purple prickles largely restricted to basal portions; floricanes fairly erect, yellow-brown with basal cracking. Susceptible to cane Botrytis, spur blight, cane spot, and root rot; some resistance to pollen transmission of raspberry bushy dwarf virus; resistant to the North American aphid vector of raspberry mosaic virus; winter hardy in the Pacific Northwest.

Haut. -Orig. at College Park, Md., by the late I.C. Haut, Univ. of Maryland. Introd. in 1987 by H.J. Swartz. 37-22-11 [Manteo selfed (Manteo = Cumberland selfed)] × B16 (=Bristol selfed). Fruit: medium; spherical; black with moderate bloom; flesh firm, cohesive; very sweet, aromatic. Fruit ripens over longer period than most black raspberries, beginning 3-5 days after Bristol. Plant: vigorous; freely branching; thorny. Susceptible to orange rust and to Elsinoe anthracnose; fruit moderately resistant to Botrytis; tobacco streak-infected plants show no loss of vigor or fertility.

Himbo-Queen. -Orig. in Rafz, Switzerland, by Peter Hauenstein, Hauenstein AG, Nursery/Rosery, 8197 Rafz, Switzerland. Registered brand Switzerland No. 352547, International No. 512691. Registered as Rafzter. Malling Explot × Puylulp. Fruit: very large; conic; skin bright, non-darkening red; firm; sweet, aromatic; excellent flavor; separates readily from receptacle; good for fresh market, including long-distance shipping; good for deep freezing. Plant: very productive; vigorous with thick canes; lateral very long, firmly attached; minimum susceptibility to cane diseases; winter hardy; resistant to drought.

Kiwigold. -Orig. in Murwillumbah, New Zealand, by C.E.H. and M.A. Thomas. Introd. in 1988. Sport of Heritage discovered in 1984; released in 1988. Fruit: medium; conic; skin yellow; firm; excellent quality; produced on primocanes; ripening time similar to Heritage. Plant: primocanes vigorous, numerous, erect, sturdy; more prickles than Heritage; no red pigmentation.

‘Malling’ Autumn Bliss. -Orig. in East Malling, England by E. Keep, J.H. Parker, and V.H. Knight, Inst. of Hort. Res. (East Malling Res. Sta.). Introd. in 1984. Complex parentage involving Rubus strigosus, R. arcticus, R. occidentalis, and the red raspberry varieties ‘Malling’ Landmark, ‘Malling’ Promise, Lloyd George, Pyne’s Royal, Burnetholm, and Norfolk Giant; cross made in 1974; selected in 1976; tested as EM 367678. Fruit: large; oval-conic; skin slightly dark red; pleasant, rather mild flavor; produced on primocanes; earlier ripening than either Heritage or Zeva Herbstemte, overlapping with late-flowering primocane types; fairly easy separation from receptacle. Plant: outyields Heritage and Zeva Herbstemte in England. Primocanes moderately numerous, glabrous, fairly erect, green with pink tinge; numerous light purple spines. Susceptible to pollen transmission of raspberry bushy dwarf virus; has the gene A10 for resistance to all races of the European aphid vector of raspberry mosaic virus; cane diseases and winter hardiness are not considered since primocanes are usually removed after fruiting.

Nordic. -Orig. in St. Paul, Minn. by J. Luby, E. Hoover, D. Bedford, S. Munson, W. Gray, D. Wilding, and C. Stushnoff, Dept. of Hort. Sci. and Landscape Architecture, Univ. of Minnesota. Introd. in 1987. Boyne × Fall Red, cross made in 1969; selected in 1972; tested as MN 603. Fruit: produced on floricanes and on primocanes; most similar to Boyne, but lighter color and superior for firmness, skin strength, and flavor. Fruit: large; conic; skin medium red, slightly more glossy than Heritage; flavor rated similar to or slightly inferior to Boyne; moderately soft prickles, susceptible to spur blight, cane spot, and root rot; some resistance to pollen transmission of raspberry bushy dwarf virus; winter hardy in Minnesota.

Perron’s Red. -Orig. in Quebec, Canada by W.H. Perron and Co. Ltd. Introd. in 1987. Zeva Herbstemte × Pathfinder; selected in 1977. Fruit: large; conic; skin medium red, slightly more glossy than Heritage; less firm than Heritage; produced on primocanes; season similar to Heritage in British Columbia. Plant: vigorous; numerous canes, fairly erect, glabrous, light green with some red overlay, purple prickles; cane disease and winter hardiness are not considered since primocanes are usually removed after fruiting; susceptible to the North American aphid vector of raspberry mosaic virus.

Redwing. -Orig. in St. Paul, Minn., by J. Luby, E. Hoover, D. Bedford, S. Munson, W. Gray, D. Wilding, and C. Stushnoff, Dept. of Hort. Sci. and Landscape Architecture, Univ. of Minn. Introd. in 1987. Heritage × Fall Red; cross made in 1969; selected in 1972; tested as MN 629. Fruit: size and color similar to Heritage in Minnesota, but color lighter and brighter in British Columbia; firmness and skin strength slightly less than Heritage; flavor similar or slightly inferior to that of Heritage; produced on primocanes in August. Ripens 10-14 days earlier than Heritage in Minnesota; season similar to Heritage in British Columbia. Plant: yields usually lower than Heritage. Primocanes vigorous; moderate numbers; stout; green with light red overlay; moderately dense; light red to pink canes; short, purple spines. No infections of raspberry bushy dwarf, tomato ringspot or raspberry mosaic viruses have been recorded, but susceptible to the North American aphid vector of the last named; susceptible to cane spot, but cane diseases and winter hardiness are not considered since primocanes are usually removed after fruiting.

Ruby (Watson). -Orig. in Geneva, N.Y., by J. Sanford, K. Maloney, and J. Reich. Introd. in 1988 as Watson. Heritage × Titan. Cross made in 1980; selected in 1982; tested as NY 114. Plant pat. pending; assigned to Nourse Farms. Watson will be distributed under the commercial trademark “Ruby.” Fruit: very large, larger than any other fall-bearing cultivar in North America; produced on primocanes; ripens several days later than Heritage in New York; conic; skin bright medium red; flavor rated similar to or slightly inferior to that of
Heritage in most comparisons; ease of separation from receptacle can vary; susceptible to pre- and postharvest fruitrot. Plant: yields similar to Heritage; vigorous; numerous primocanes; somewhat spreading; green with some purple overlay; sharp, light purple prickles distributed uniformly and sparsely. Susceptible to root rot, crown gall, and the North American aphid vector of raspberry mosaic virus. Calif. (often reported resistant to yellow rust and powdery mildew; cane diseases and winter hardiness are not considered since primocanes are usually removed after fruiting.

**Stonehurst.** -Orig. in Santa Clara Valley, Calif., by J.M. Reiter and E.V. Goldsmith. Selected in 1973. Released in 1979 by J.M. Reiter, La Selva Beach, Calif. Plant pat. 4485, 20 Nov. 1979. Parentage unknown. Fruit: smaller than Willamette and larger than Heritage; skin rosy red to pomegranate purple; numerous drupelets; surface can be irregular; round, partially hidden by leaves; easy separation from receptacle in Watsonville, Calif. Production peaks on primocanes from early August until mid-September and on floricanes during late week of May and the first 2 weeks of June; can be produced continuously from May until December. Plant: high yielder with two-thirds on primocanes and one-third on floricanes; primocanes upright and rigid, non-branching, light green with soft, reddish-brown prickles at base; floricanes light brown and branching; some root rot resistance.

**Summit.** -Orig. in Corvallis, Ore., by F.J. Lawrence, released jointly by USDA-ARS Oregon Agr. Exp. Sta. and Washington Agr. Res. Center.Introduced in 1989; selected in 1976. ORUS 1838 (Falhed × ORUS 1347) × ORUS 1842 (NY 600 × OR 1347) (ORUS 1347 is a very late prunocane fruiting selection with firm, attractive fruit with a pedigree involving Newburgh, Washington, and Willamette.) Tested as ORUS 2033. Fruit: small to medium; skin medium red color; firm; round, produced on primocanes in August; ripens 10-14 days earlier than Heritage in the Pacific Northwest; reasonably easy separation from receptacle; good fresh market and processing qualities. Plant: high yielder; primocanes vigorous, non-pubescent, waxy; a few scattered purple prickles; fruiting laterals strong and medium long. Good resistance to root rot; susceptible to pollen transmission of raspberry bushy dwarf virus and to the North American aphid vector of raspberry mosaic virus; cane diseases and winter hardiness are not considered since primocanes are usually removed after fruiting.

**Sweetbriar.** -Orig. in Santa Clara Valley, Calif., by J.M. Reiter and E.V. Goldsmith. Selected in 1973. Released in 1979 by J.M. Reiter, La Selva Beach, Calif. Plant pat. 4486, 20 Nov. 1979. Parentage unknown. Fruit: slightly smaller than Willamette, larger than Heritage; skin rose to rose red; firmer than Willamette, softer than Heritage; conical; symmetrical; individual drupelets sometimes irregular in size; well-exposed; easy separation from receptacle. In Watsonville, Calif. production peaks on primocanes during September and in early October and on floricanes during June and first week in July; can be produced continuously from May until December. Plant: high yielder with 65% of the crop on primocanes and 35% on floricanes. Primocanes upright, rigid, non-branching, light green with soft light brown prickles at base; floricanes light brown and branching.

**Titan.** -Orig. in Geneva, N.Y., by J.C. Sanford, D.K. Ourecky, and J.E. Reich, New York State Agr. Exp. Sta., Cornell Univ. Introduced in 1985. Hilton × N.Y. 598 (Newburgh × St. Walfried); cross made in 1963; selected in 1966; tested as N.Y. 588. Fruit: very large; skin bright red; long conical; large cavity; firm in New York, but soft in British Columbia; pleasant, mild flavor, early ripening; can bedifficult to remove from receptacle and thus not suited to machine harvesting; susceptible to pre- and postharvest rots. Plant: unusually high yield potential; moderate vigor. Primocanes usually not numerous; stout; green; glabrous; prickles small, basal, green, with darkened tips. Floricanes dark brown; some cracking. Susceptible to cane diseases in New York; in British Columbia shows some resistance to spur blight and moderate susceptibility to cane Botrytis and cane spot; susceptible to pollen transmission of raspberry bushy dwarf and tobacco streak viruses; susceptible to tomato ringspot virus and to root rot; susceptible to the North American aphid vector of raspberry mosaic virus and to the aphid vector of leaf curl virus and to the viruses themselves; winter hardy in most parts of New York state.

Watson. -See Ruby.

---

**STRAWBERRY**

**Gene Galetta**

**Cavendish.** -Orig. in Kentville, Nova Scotia, by D.L. Craig Agr. Canada Res. Sta. Introduced in 1990. Gloocaph × Annapolis; cross made in 1981, selected in 1983; tested as K83-4. Fruit: medium to very large; surface deep glossy red, medium firm; flesh firm, red except white beneath calyx near core; flavor sweet, less tart than Honeoye, melon-like; tolerant to gray mold. Ripens midseason. Plants: medium vigor; runner well, but not excessively; crown size small to medium; very productive. Tolerant or resistant to Verticillium wilt; resistant to red stelaraces A-4, A-6, and A-7; tolerant to powdery mildew; susceptible to green petal virus.


**Lategloew.** -Orig. in Beltsville, Md., by D.H. Scott, USDA. Introduced in 1987. Tamella × MDUS 3184 (NCUS 1768 × Surocroc); cross made in 1974; selected at Wye Inst., near Queenstown, Md., in 1976 by A.D. Draper and P. Rosati; tested as MDUS 4839. Fruit: large to very large; uniform in symmetry; skin firm, deep glossy scarlet; flesh soft to medium, medium red; sweet, juicy, aromatic; tolerant to gray mold and leatherrot. Ripens after Allstar, with Delite and Rosanne. Plants: runner freely; medium size; marketable yields very high, like those of Lester. Very resistant to most races of red stede; resistant to Verticillium wilt; tolerant to leaf spot and leaf scorch; susceptible to anthracnose, leaf blight, and powdery mildew. Flowers late with Allstar and Guardian.

**Lester.** -Orig. in Beltsville, Md., by D.H. Scott, USDA. Introduced in 1984. Raritan × MDUS 3413 [("Tennessee Shipper × Maytime) × Stelemaster] × Earldawn; cross made in 1969; selected at Wye Inst. near Queenstown, Md. in 1971; tested as MDUS 4359. Fruit: medium large, very attractive, symmetrical, uniform deep red; flesh pink, firm, mild flavor; tolerant to gray mold and leather rot. Plants: vigorous; medium size; medium-heavy production; runner freely to form medium-dense fruiting beds. Resistant to seven races of red stede; susceptible to Verticillium wilt; tolerant or resistant to powdery mildew, leaf scorch, and leaf blight; susceptible to anthracnose.

**Sumas.** -Orig. in Vancouver, B.C., by H.A. Daubeney. Agriculture Canada Research Sta. Introduced in 1986. Cheam × Tioga; cross made in 1969; tested as BC 69-5-34. Fruit: large; bright, does not darken; medium to light in color; texture medium; slightly larger than Franquette; kernel color variable. Tree: intermediate vigor, making tree of medium size; semi-upright; laterally fruitful; late-leafing; precocious; kernel color medium to light brown; non-dormant; quite persistent. Ripens in early August; with Delite and Rosanne. Ripens after Allstar and Guardian; tolerant to leaf spot and leaf scorch; susceptible to anthracnose, leaf blight, and powdery mildew. Flowers late with Allstar and Guardian.

**Titan.** -Orig. in Geneva, N.Y., by J.C. Sanford, D.K. Ourecky, and J.E. Reich, New York State Agr. Exp. Sta., Cornell Univ. Introduced in 1985. Hilton × N.Y. 598 (Newburgh × St. Walfried); cross made in 1963; selected in 1966; tested as N.Y. 883. Fruit: very large; skin bright red; long conical; large cavity; firm in New York, but soft in British Columbia; pleasant, mild flavor, early ripening; can bedifficult to remove from receptacle and thus not suited to machine harvesting; susceptible to pre- and postharvest rots. Plant: unusually high yield potential; moderate vigor. Primocanes usually not numerous; stout; green; glabrous; prickles small, basal, green, with darkened tips. Floricanes dark brown; some cracking. Susceptible to cane diseases in New York; in British Columbia shows some resistance to spur blight and moderate susceptibility to cane Botrytis and cane spot; susceptible to pollen transmission of raspberry bushy dwarf and tobacco streak viruses; susceptible to tomato ringspot virus and to root rot; susceptible to the North American aphid vector of raspberry mosaic virus and to the aphid vector of leaf curl virus and to the viruses themselves; winter hardy in most parts of New York state.

Watson. -See Ruby.

---

**WALNUT**

**Cisco.** -Orig. at Davis, Calif., by Gale H. McGranahan, David E. Ramos, Harold I. Forde, and Ronald G. Snyder. Introduced in 1990 as a pollenerizer for Chandler and Howard. Meylan and Pedro; cross made in 1965 by Forde. Moderate to heavy pollen crop is produced during period of peak receptivity of Chandler and Howard, beginning by the seventh leaf, with light yields as early as second leaf. Nuts: shell medium to light in color; textured medium; slightly larger than Franquette; kernel color variable. Tree: intermediate vigor, making tree of moderate size; semi-upright; laterally fruitful; late-leafing; precocious; not productive in early years.
### PATENTED VARIETIES

<table>
<thead>
<tr>
<th>Code</th>
<th>Variety Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3057</td>
<td>Cs, apple rootstock</td>
</tr>
<tr>
<td>3133</td>
<td>Hi-Red®, nectarine</td>
</tr>
<tr>
<td>3295</td>
<td>Black Imperial®, grape</td>
</tr>
<tr>
<td>3309</td>
<td>Regal Gala, apple</td>
</tr>
<tr>
<td>3345</td>
<td>Southerner, nectarine</td>
</tr>
<tr>
<td>3557</td>
<td>Starkspur® UltraRed Delicious, apple</td>
</tr>
<tr>
<td>4155</td>
<td>Garden Delight, nectarine</td>
</tr>
<tr>
<td>4451</td>
<td>Sweet Sue, peach</td>
</tr>
<tr>
<td>4485</td>
<td>Stonehurst, raspberry</td>
</tr>
<tr>
<td>4486</td>
<td>Sweetbriar, raspberry</td>
</tr>
<tr>
<td>4571</td>
<td>Cassie, peach</td>
</tr>
<tr>
<td>4587</td>
<td>Ace® Spur Delicious, apple</td>
</tr>
<tr>
<td>4633</td>
<td>Jonafree, apple</td>
</tr>
<tr>
<td>4678</td>
<td>Mark, apple rootstock</td>
</tr>
<tr>
<td>4724</td>
<td>McShay, apple</td>
</tr>
<tr>
<td>4824</td>
<td>Haralred™, apple</td>
</tr>
<tr>
<td>4893</td>
<td>Pacific Star™, nectarine</td>
</tr>
<tr>
<td>4902</td>
<td>Black Diamond™, plum</td>
</tr>
<tr>
<td>4927</td>
<td>Star Bright™, nectarine</td>
</tr>
<tr>
<td>4928</td>
<td>Saint Croix, grape</td>
</tr>
<tr>
<td>4942</td>
<td>Crimson Star™, nectarine</td>
</tr>
<tr>
<td>4943</td>
<td>Kay Gray, grape</td>
</tr>
<tr>
<td>4977</td>
<td>Golden Nectar, plum</td>
</tr>
<tr>
<td>4980</td>
<td>Kern Sun, peach</td>
</tr>
<tr>
<td>5103</td>
<td>Ryan Sun, peach</td>
</tr>
<tr>
<td>5112</td>
<td>Citation, peach rootstock</td>
</tr>
<tr>
<td>5124</td>
<td>Stark® Sensation, peach</td>
</tr>
<tr>
<td>5139</td>
<td>July Sun, peach</td>
</tr>
<tr>
<td>5140</td>
<td>August Sun, peach</td>
</tr>
<tr>
<td>5151</td>
<td>Early Superior Seedless™, grape</td>
</tr>
<tr>
<td>5228</td>
<td>June Glo, nectarine</td>
</tr>
<tr>
<td>5243</td>
<td>Golden Russet Bosc, pear</td>
</tr>
<tr>
<td>5276</td>
<td>Honey Bee, peach</td>
</tr>
<tr>
<td>5297</td>
<td>Berenda Sun, peach</td>
</tr>
<tr>
<td>5308</td>
<td>Flavor Giant, apricot</td>
</tr>
<tr>
<td>5333</td>
<td>Novole, apple trunkstock</td>
</tr>
<tr>
<td>5344</td>
<td>TopSpur Delicious, apple</td>
</tr>
<tr>
<td>5342</td>
<td>Sweet Rosa, plum</td>
</tr>
<tr>
<td>5343</td>
<td>Black Torch™, plum</td>
</tr>
<tr>
<td>5412</td>
<td>OHxF 40, pear rootstock</td>
</tr>
<tr>
<td>5468</td>
<td>OHxF 217, pear rootstock</td>
</tr>
<tr>
<td>5473</td>
<td>Summer Star™, nectarine</td>
</tr>
<tr>
<td>5486</td>
<td>Royal Zee, plum</td>
</tr>
<tr>
<td>5487</td>
<td>Black Flame™, plum</td>
</tr>
<tr>
<td>5537</td>
<td>Revival, chestnut</td>
</tr>
<tr>
<td>5559</td>
<td>OHxF 69, pear rootstock</td>
</tr>
<tr>
<td>5573</td>
<td>OHxF 282, pear rootstock</td>
</tr>
<tr>
<td>5584</td>
<td>Dayton, apple</td>
</tr>
<tr>
<td>5623</td>
<td>Tasty-Gold, nectarine</td>
</tr>
<tr>
<td>5624</td>
<td>Autumn Giant, plum</td>
</tr>
<tr>
<td>5641</td>
<td>Junecrest, peach</td>
</tr>
<tr>
<td>5654</td>
<td>Summer Diamond, nectarine</td>
</tr>
<tr>
<td>5680</td>
<td>Mars, grape</td>
</tr>
<tr>
<td>5686</td>
<td>Shawnee, blackberry</td>
</tr>
<tr>
<td>5710</td>
<td>Chan, peach</td>
</tr>
<tr>
<td>5716</td>
<td>Esprit, grape</td>
</tr>
<tr>
<td>5744</td>
<td>Mid Red, plum</td>
</tr>
<tr>
<td>5745</td>
<td>Topcrest, peach</td>
</tr>
<tr>
<td>5761</td>
<td>Earlee Granee, apple</td>
</tr>
<tr>
<td>5771</td>
<td>Saint Pepin, grape</td>
</tr>
<tr>
<td>5801</td>
<td>Inmil, cherry rootstock</td>
</tr>
<tr>
<td>5802</td>
<td>Camil, cherry rootstock</td>
</tr>
<tr>
<td>5803</td>
<td>Damil, cherry rootstock</td>
</tr>
<tr>
<td>5821</td>
<td>White Lady, peach</td>
</tr>
<tr>
<td>5822</td>
<td>Ison, grape</td>
</tr>
<tr>
<td>5824</td>
<td>Black Fry, grape</td>
</tr>
<tr>
<td>5831</td>
<td>Zee Red, peach</td>
</tr>
<tr>
<td>5832</td>
<td>Zee Lady, peach</td>
</tr>
<tr>
<td>5873</td>
<td>June Sun, peach</td>
</tr>
<tr>
<td>5874</td>
<td>David Sun, peach</td>
</tr>
<tr>
<td>5897</td>
<td>Jewel, strawberry</td>
</tr>
<tr>
<td>5903</td>
<td>Gar Jumbo, plum</td>
</tr>
<tr>
<td>5904</td>
<td>Santa Rosa-Two, plum</td>
</tr>
<tr>
<td>5905</td>
<td>Black Jewel, plum</td>
</tr>
<tr>
<td>5937</td>
<td>Jonagored, apple</td>
</tr>
<tr>
<td>5947</td>
<td>Elbee, apple</td>
</tr>
<tr>
<td>6006</td>
<td>Howard Sun, plum</td>
</tr>
<tr>
<td>6007</td>
<td>Summer Sun, peach</td>
</tr>
<tr>
<td>6008</td>
<td>September Sun, peach</td>
</tr>
<tr>
<td>6009</td>
<td>PreCal™, grape</td>
</tr>
<tr>
<td>6025</td>
<td>Queencrest, peach</td>
</tr>
<tr>
<td>6043</td>
<td>Par-Feet Spur Criterion, apple</td>
</tr>
<tr>
<td>6044</td>
<td>Midnite Sun, plum</td>
</tr>
<tr>
<td>6045</td>
<td>Sierra Lady, peach</td>
</tr>
<tr>
<td>6077</td>
<td>Anna Sun, plum</td>
</tr>
<tr>
<td>6118</td>
<td>Broken Heart, plum</td>
</tr>
<tr>
<td>6148</td>
<td>Daliguy Jonagold, apple</td>
</tr>
<tr>
<td>6153</td>
<td>Ebony Sun, plum</td>
</tr>
<tr>
<td>6158</td>
<td>Sierra Star™, nectarine</td>
</tr>
<tr>
<td>6159</td>
<td>Melody, grape</td>
</tr>
<tr>
<td>6160</td>
<td>Einset Seedless, grape</td>
</tr>
<tr>
<td>6172</td>
<td>Scarlet Gala, apple</td>
</tr>
<tr>
<td>6190</td>
<td>Super Chief™ Delicious, apple</td>
</tr>
<tr>
<td>6200</td>
<td>Scarlet Sun, plum</td>
</tr>
<tr>
<td>6224</td>
<td>Telamon, apple</td>
</tr>
<tr>
<td>6225</td>
<td>Tuscan apple</td>
</tr>
<tr>
<td>6226</td>
<td>Trajan, apple</td>
</tr>
<tr>
<td>6229</td>
<td>Early Maycrest, peach</td>
</tr>
<tr>
<td>6230</td>
<td>Haig Arakelian, St., peach</td>
</tr>
<tr>
<td>6245</td>
<td>Cascade, pear</td>
</tr>
<tr>
<td>6268</td>
<td>Williams’ Pride, apple</td>
</tr>
<tr>
<td>6283</td>
<td>Necta Zee, nectarine</td>
</tr>
<tr>
<td>6361</td>
<td>Adina, apple</td>
</tr>
<tr>
<td>6362</td>
<td>OHxF 87, pear rootstock</td>
</tr>
<tr>
<td>6407</td>
<td>Tulare, cherry</td>
</tr>
<tr>
<td>6409</td>
<td>Tasty Zee, peach</td>
</tr>
<tr>
<td>6410</td>
<td>Double Jewel, peach</td>
</tr>
<tr>
<td>6450</td>
<td>Elstar, apple</td>
</tr>
<tr>
<td>6472</td>
<td>Amparo, peach</td>
</tr>
<tr>
<td>6519</td>
<td>Sansa, apple</td>
</tr>
<tr>
<td>6671</td>
<td>Valley Red, peach</td>
</tr>
<tr>
<td>6674</td>
<td>Heritage, chestnut</td>
</tr>
<tr>
<td>6676</td>
<td>Brooks, cherry</td>
</tr>
<tr>
<td>6678</td>
<td>Choctaw, blackberry</td>
</tr>
<tr>
<td>6679</td>
<td>Navaho, blackberry</td>
</tr>
<tr>
<td>6689</td>
<td>Swiss Gourmet™, apple</td>
</tr>
<tr>
<td>6702</td>
<td>Vallee Spur Delicious™, apple</td>
</tr>
<tr>
<td>6703</td>
<td>Saturn, grape</td>
</tr>
<tr>
<td>6747</td>
<td>June Pride, peach</td>
</tr>
<tr>
<td>6753</td>
<td>Mid Glo, nectarine</td>
</tr>
<tr>
<td>6755</td>
<td>Tri-Gems, apricot</td>
</tr>
<tr>
<td>6763</td>
<td>Flavor Supreme, plumcot</td>
</tr>
<tr>
<td>6827</td>
<td>Jon Boy, peach</td>
</tr>
<tr>
<td>6828</td>
<td>Som-Mor, peach</td>
</tr>
<tr>
<td>6912</td>
<td>Valley Sun, peach</td>
</tr>
<tr>
<td>6940</td>
<td>Lady Lou, peach</td>
</tr>
<tr>
<td>6955</td>
<td>Galaxy, apple</td>
</tr>
<tr>
<td>6976</td>
<td>Valley Gem, peach</td>
</tr>
<tr>
<td>6992</td>
<td>May Sun, peach</td>
</tr>
<tr>
<td>7001</td>
<td>Yataka, apple</td>
</tr>
<tr>
<td>7002</td>
<td>Pioneer Mac™, apple</td>
</tr>
<tr>
<td>7012</td>
<td>Harvest Sun, nectarine</td>
</tr>
<tr>
<td>7049</td>
<td>Summer Bright, nectarine</td>
</tr>
<tr>
<td>7063</td>
<td>Ginger Gold™, apple</td>
</tr>
<tr>
<td>7064</td>
<td>Fire Diamond, nectarine</td>
</tr>
</tbody>
</table>
INDEX OF VARIETIES DESCRIBED
(Synonyms in italics)

AU-Amber, plum
AU-Cherry, plum
AU-Rosa, plum
AU-Rubrum, plum
Ace® Spur Delicious, apple
Acey Mac, apple
Adina, apple
African Queen, grape
Alachua, grape
Aldermer, plum
Algonquin, raspberry
Allgold, peach
Amity, raspberry
Amparo, peach
Anna Sun, plum
Anna's Favorite, apple
Applethorpe Earlidel), apple
Applethorpe Summerdel, apple
Arctic Gem, peach
Arlet, apple
August Sun, peach

Autumn Giant, plum
Avimag, peach rootstock
BY69-1637-P, plum
Baldwin, blueberry
Beaufort, grape
Beaumont, grape
Belchard®, apple
Belleire, peach
Bemali, apple rootstock
Berenda Sun, peach
Big Red, mayhaw
Black Beauty, grape
Black Diamond™, plum
Black Flame™, plum
Black Fry, grape
Black Imperial™, grape
Black Jewel, plum
Black Torch™, plum
Blanc Du Bois, grape
Blue Ridge, blueberry
Bluegold, blueberry
Bona, blueberry
Bountiful, apple
Bounty, blueberry
Bounty, peach
Brandis, grape
Brendavilba, nectarine
Britegold, apple
Broken Heart, plum
Brooks, cherry
Budagovsky 9, apple rootstock
Budagovsky 57-490, apple rootstock
Budagovsky 57-491, apple rootstock
Bud. 9, apple rootstock
Bud.490, apple rootstock
Bud.491, apple rootstock
Byrongold, plum
c6, apple rootstock
Cadaman®, peach rootstock
Camil, cherry rootstock
Cape Fear, blueberry
Cascade, pear
Cassie, peach
Catalina, plum
Cavendish, strawberry
Celebration, plum
Centennial, raspberry
Centennial Seedless, grape (addendum
Centurion, blueberry
Century I, grape
Challenger, grape
Chan, peach
Chantecler, apple
Charger, cherry rootstock
Chaucer, blueberry
Chester Thornless, blackberry
Chick-A-Dee McIntosh, apple
Chilliwack, raspberry
Choctaw, blackberry
Choice, blueberry
Christmas Rose, grape (addendum)
Cisco, walnut
Citation, peach rootstock
Clendining, peach
Cob, cherry rootstock
Columbina, nectarine
Comox, raspberry
Cooper, blueberry
Cooper Granny Smith, apple
Corabel, filbert
Coromandel Red, apple
Crimson Star™, nectarine
Crown Princess, peach
Dalguy Jonagold, apple
Damas GF 1869, peach rootstock
Danil cherry rootstock
Daniel, apple (addendum)
Darlene, grape
Darling, grape
Dave’s Delight, pear
David Sun, peach
Dawn Seedless, grape (addendum)
Daygon, pear rootstock
Daynir, pear rootstock
Dayre, pear rootstock
Dayton, apple
Daytor, pear rootstock
Desertred, peach
Diamond Princess, peach
Double Jewel, peach
Double X French Prune, plum
Douglas, strawberry (addendum)
Duke, blueberry
Dulcet, apple
Earlee Grannee™, apple
Earlitchief™, apple
Earlidel, apple
Earliscarlet, nectarine
Early Granny, apple
Early Granny, apple
Early Maycrest, peach
Early Spur Rome, apple
Early Sun, nectarine
Early Superior Seedless™, grape
Ebano, blackberry
Ebony Sun, plum
Edelweiss, grape
Einset Seedless, grape
Elan, apple
Elbee, apple
Eldorado, peach (addendum)
Elastar, apple
Empress, apple
Esprit, grape
Extra, Extra Fancy, peach
Fall Red, apple
Falstaff, apple
Farris Bellhusk, filbert
Ferciana, plum rootstock
Fereley, plum rootstock
Ferdor, peach rootstock
Fern, strawberry (addendum)
Fiesta™, apple
Fire Diamond, nectarine
Fireprince, peach
Flameburst™, apricot
Flanagan Delicious, apple
Flavor Delight, plumcot
Flavor Giant, apricot
Flavor Supreme, plumcot
Flordabeauty, peach
Flordacrest, peach
Flordadawn, peach
Flordaguard, peach rootstock
Flordaglo, peach
Flordaglebre, peach
Flordastar, peach
Florina, apple
Fortune, plum
Frankad, apple
Freedom, apple (addendum)
Fresno Sun, nectarine
Fulford Gala™, apple
GF 31, apricot rootstock
GF 53.7, peach rootstock
GF 305, peach rootstock
GF 557, peach rootstock
GM.9, cherry rootstock
GM.6/1, cherry rootstock
GM.79, cherry rootstock
Gala Mast, apple
Galagolden, apple
Galaxy, apple
Gar Jumbo, plum
Garden Delight, nectarine
Gavin, apple
Georgia, blueberry
Ginger Gold™, apple
Gloster, apple
Gold-N-Rose, apple
Goldbar, apricot
Goldens, grape
Golden Nectar, plum
Golden Russet Bosc, pear
Golden Supreme™, apple
Golden apple
Goldilocks, peach
Goldprince, peach
Goldsmith, apple
Goldstrike, apricot
Grand Traverse, filbert
Granite Supreme, peach
Greensleeves, apple
Griffith, apple (addendum)
Griffith Gold, apple (addendum)
Gulfcoast, blueberry
Huig Arakelian, Sr., peach
Hansen 536, almond rootstock
Hansen 2168, almond rootstock
Haralred™, apple
Harblaze, nectarine
Harmon, peach
Harogem, apricot
Harrow Diamond, peach
Harval, apricot
Harvest Sun, nectarine
Hatsuaki, apple
Haut, raspberry
Hawthorne, peach
Hecker, strawberry (addendum)
Heritage, chestnut
Hermosillo, peach
Hi-Red™, nectarine
Hida™, apple
Higama, peach rootstock
Hillwell, apple
Hillwell Braeburn, apple
Himekami, apple
Himbo-Queen, raspberry
Hokuto, apple
Honeycrisp, apple
Honey Bee, peach
Howard Sun, plum
Illini Hardy, blackberry
Imperial Gala™, apple
Improved Red Jonathan, apple (addendum)
Inmil, cherry rootstock
Ishara®, plum rootstock
Ison, grape
Iwakami, apple
Janebell, grape
Janet, grape
Jaspi, plum rootstock
Jayhaven, peach
Jerseycot, apricot
Jester, apple
Jewel, strawberry
Jon Boy, peach
Jonafree, apple
Jonagored, apple
Jored, apple
Jork 9, apple rootstock
Joyous, grape
Julior®, peach rootstock
July Sun, peach
June Glo, nectarine
June Pride, peach
June Sun, peach
Junecrest, peach
Juneprince, peach
Jupiter, apple
Karmijn, apple
Kay Gray, grape
Kee-Wah-Din, grape
Keepsake, apple
Kemp Delicious, apple
Kent, apple
Kern Sun, peach
Kestrel, apple
King Jonagold, apple
Kitakami, apple
Kiwigold, raspberry
Kogutsu, apple
Korona, apple
Kotata, blackberry
La Festival, peach
Lacrosse, grape
LaJewel, peach
Lady Lou, peach
Lady Nancy, peach
Lateglow, strawberry
Lester, strawberry
Lincoln Logan, hybrid berry
Lisa, filbert
Loomis, grape
Lustre Elstar™, apple
Lysgolden®, apple
Maigold, apple
McShay, apple
MAC-9, apple rootstock
Malling Autumn Bliss, raspberry
Malling Sunberry, hybrid berry
Maravilma, peach
Mark, apple rootstock
Mars, grape
Marubakaido N-1, apple rootstock
May Sun, peach
Melody, grape
Michinoku, apple
Mid Glo, nectarine
Mid Red, plum
Midnite Sun, plum
Milton Early Italian Prune, plum
Mirabi®, plum rootstock
Moira, apple
Mont&r, peach rootstock
Mr.S.2/5, peach rootstock
Murray, apple
MxM2, cherry rootstock
MxM14, cherry rootstock
MxM39, cherry rootstock
MxM60, cherry rootstock
MxM97, cherry rootstock
Myran®, peach rootstock
Navaho, blackberry
Nebuta, apple
Necta Zee, nectarine
Nelson, blueberry
Nemared, peach rootstock
Nertschinsk, apple interstock
Nesbitt, grape
New Gold, apple
New Jonagold, apple
Newbelle, peach
Newhaven, peach
Nicbel® Jonagold, apple
Nittany, apple
Noran, apple
Norcue, apple
Nordu, apple
Nordic, raspberry
Noret, apple
Norhey, apple
Norland, apple
Norson apple
Northcountry, blueberry
Northern Star, apple
Novamac, apple
Novaspy, apple
Novole, apple
Novole, apple trunkstock
Nured® Spur Delicious, apple
Nured® Winesap, apple
O’Neal, blueberry
O’Rourke, filbert
OHxF 18, pear rootstock
OHxF 40, pear rootstock
OHxF 51, pear rootstock
OHxF 69, pear rootstock
OHxF 87, pear rootstock
OHxF 97, pear rootstock
OHxF 217, pear rootstock
OHxF 266, pear rootstock
OHxF 267, pear rootstock
OHxF 282, pear rootstock
OHxF 288, pear rootstock
OHxF 333, pear rootstock
Oberle, apple
October Sun, plum
Orin, apple
Orlando Seedless, grape
Oro-A, peach
Ottawa 3, apple rootstock
P.1, apple rootstock
P.2, apple rootstock
P.22, apple rootstock
Pacific Star™, nectarine
Pajarro, strawberry (addendum)
Pam, grape
Par-Feet Spur Criterion, apple
Pearleaf Crab, apple trunkstock
Perron’s Black, blackberry
Perron’s Red, raspberry
Pineapple, grape
Pink Lady, apple
Pioneer Mac™, apple
PreCal™, grape
Primicia, apple
Princesa, apple
Puget Gold, apricot
Queencrest, peach
Queensland Bellerosa, plum
Queensland Earlissweet, cherry plum
Querina, apple
Rayon, peach
Razor Golden Delicious, apple
Red Fuji, apple
Red Braeburn, apple
Red-Leafed Paradise, apple rootstock
Redglobe, grape (addendum)
Redsleeves, apple
Redwing, raspberry
Regal Gala™, apple
Reveille, blueberry
Reverend Morgan, apple
Revival, chestnut
Richelieu, apple
Rosa, grape
Roseprincess, nectarine
Rouville, apple
Royal Empire™, apple
Royal Zee, plum
Royalty, raspberry (addendum)
Rubinstar, apple
Rubinstar Jonagold, apple
Rubira, peach rootstock
Ruby, raspberry
Rubysweet, plum
Ryan Sun, peach
Saint Croix, grape
Saint Pipin, grape
San Pedro, peach
Sansa, apple
Santa Rosa-Two, plum
Santana, strawberry (addendum)
Saturn, grape
Sayaka, apple
Scarlet, apple
Scarlet Sun, plum
Scarlet Gala, apple
Scarletpearl, peach
Scioto, grape
Segundo, plum
Sekai-ichi, apple
Selva, strawberry (addendum)
Sensation, peach
Senshu, apple
September Ruby, apple
September Sun, peach
Shamrock, apple
Shawnee, blackberry
Shermans Early, peach
Shermans Red, peach
Shizuka, apple
Sierra, blueberry
Sierra Lady, peach
Sierra Star™, nectarine
Silvan, blackberry
Simone, grape
Som-Mor, peach
Soquel, strawberry (addendum)
Southerner, apricot
Sovereign Opal, grape
Sovereign Tiara, grape
Spur Criterion, apple
St. Julien GF 655-2, peach rootstock
St. Julien No. 1, peach rootstock
St. Julien No. 2, peach rootstock
Star Bright™, nectarine
Stark® Adina™, apple
Stark® Double Delight, apricot (addendum)
Stark® Finale, peach (addendum)
Stark® GulfPride, nectarine (addendum)
Stark® Gulf Queen, peach (addendum)
Stark® HoneyGlo, nectarine (addendum)
Stark® Sensation, peach
Starkspur® Compact Red Delicious, apple (addendum)
Starkspur® Dixired Delicious, apple (addendum)
Starkspur® Law Rome, apple (addendum)
Starkspur® UltraRed Delicious, apple
Starkspur® UltraStripe Delicious, apple (addendum)
Starkspur® Winter Banana, apple (addendum)
State Fair, apple
Stonehurst, raspberry
Sugar Lady, peach
Sugar Pop, grape
Sumac, apple
Sumas, strawberry
Summer Bright, nectarine
Summer Diamond, nectarine
Summer Mac, apple (addendum)
Summer Star™, nectarine
Summer Sun, peach
Summerdel, apple
Summit, raspberry
Sundollar, nectarine
Sundowner, apple
Sundowner, nectarine
Sungem, nectarine
Sunhome, nectarine
Sunrise, blueberry
Suntan, apple
Super Chief™ Delicious, apple
Superstar™, nectarine
Supreme, grape
Sweet Jenny, grape
Sweet Rosa™, plum
Sweet Sixteen, apple
Sweet Sue, peach
Sweetbriar, raspberry
Sweethaven, peach
Sweetheart, plum
Swenson Red, grape
Swiss Gourmet™, apple
Symphony, grape (addendum)
TAMU Denman, peach
Tasty Zee, peach
Tasty-Gold, nectarine
Tepee Red Empire, apple
Telamon, apple
Texstar, peach
Thome Empire, apple
Tift Spur Rome, apple
Titan, raspberry
Tom MacLean, apple
Tomcot, apricot
Topcrest, peach
Topspur Delicious, apple
Toro, blueberry
Trajan, apple
Trent, apple
Tri-Gems, apricot
Tropic Beauty, peach
TropicSnow, peach  
TropicSweet, peach  
Tsugaru, apple  
Tulare, cherry  
Tummelberry, hybrid berry  
Tuscan apple  
Tustin, strawberry (addendum)  
ValleGrande, peach  
Vallee Spur™ Delicious, apple  
Valley Gem, peach  
Valley Red, peach  
Valley Sun, peach  
Velvaglo, apricot  
Vivagold, apricot  

Voyageur, plum  
Waldo, blackberry  
Warren, pear  
Watson, raspberry  
Westcot, apricot  
White Lady, peach  
Willamette, filbert  
Williams' Pride, apple  
Yataka, apple  
Yoko, apple  
YP, apple rootstock  
Yumir, peach rootstock  
Zee Lady, peach  
Zee Red, peach