

# Register of New Fruit and Nut Varieties

## List 41

Edited by W.R. Okie

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**Crop Listings**<sup>1</sup>: Apple, Blackberry, Blueberry, Cherry—Tart, Cherry—Sweet, Cherry—Rootstock, Currant, Grape, Nectarine, Peach, Pear—European, Pecan, Plum, Plumcot, Prunus Rootstock, Raspberry, Strawberry, Tropical Fruit—Abiu, Tropical Fruit—Canistel, Tropical Fruit—Mamey Sapote, Tropical Fruit—Sapodilla, Tropical Fruit—Zapote Chupa

### APPLE

Robert A. Norton  
AppleCorps  
East Wenatchee, Wash.

**Autumn Rose**.—Strain of Fuji considered to be superior to Nagafu 12. **Origin**: whole tree Fuji mutation discovered in Milton-Freewater, Ore. **Fruit**: 70% to 80% red color with fine stripe similar to Nagafu 12. Similar in other characteristics to other Fujis.

**Banning**.—See Ultima™ Gala.

**Cripps 2**.—See Sundowner.

**Eve® Braeburn**.—Strain of Braeburn with full red blush. **Origin**: mutation of Braeburn discovered in Nelson, New Zealand. USPP<sup>2</sup> 11604. Assigned to Willow Drive Nursery, Ephrata, Wash. **Fruit**: 90% to 100% red blush, slightly later maturity than standard Braeburn.

**Kumeu Crimson Braeburn**.—Early maturing strain of Braeburn with prominent stripe pattern. **Origin**: limb mutation of standard Braeburn discovered in Kumeu district of New Zealand. USPPAF. Assigned to International Plant Management Inc., Lawrence, Mich. **Fruit**: rich red color with prominent stripe developing 14 days before standard Braeburn.

**Snyder**.—See Top Export® Fuji.

**Sundowner (Cripps 2)**.—Extremely late-ripening cultivar from Australia. **Origin**: Golden Delicious x Lady Williams, developed by Western Australian Dept. of Agriculture breeding program. USPP 8477. **Fruit**: red skin, sweet, crisp, white flesh with long shelf life. Matures 2 weeks after Granny Smith. **Tree**: vigorous, upright, tendency to biennial bearing.

**Top Export® Fuji (Snyder)**.—Full-color sport of Red Fuji, with prominent stripe. **Origin**: probable mutation of BC 2 Fuji discovered in Quincy, Wash., 1994 by C&O Nursery. Introduced 2001. USPP 12098. **Fruit**: typical Fuji in all characteristics except skin, which has very prominent striped pattern. **Tree**: similar to other Fujis.

**Ultima Gala™ (Banning)**.—Strain of Gala with high color and strong stripe. **Origin**: limb mutation of Imperial Gala discovered in 1997 in Wenatchee, Wash. USPPAF. **Fruit**: 95% to 100% red color with strong stripe. Other fruit and tree characteristics similar to Imperial Gala.

### BLACKBERRY

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Univ. of Arkansas, Fayetteville  
Chad E. Finn

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Corvallis, Ore.

**Caiguangué**.—A thorny, erect blackberry. **Origin**: EMBRAPA/Clima Temperado, Pelotas, RS, Brazil by Alverides Santos; an F<sub>2</sub> of a cross of Cherokee x Selection Black 1 (=Shaffer Tree x Brazos). Not patented or protected. **Fruit**: medium, 6 g; firm; balanced sweet/acid

flavor; medium-size seeds; ripens near Tupi. **Plant**: vigorous; erect; thorny; with good propagation capability; chilling requirement is lower than 200 h; productive, with average production under Southern Brazil conditions of 3.5 kg/plant.

**Chesapeake**.—A thorny, very large-fruited, fine-flavored blackberry. **Origin**: Univ. of Maryland at College Park by S. Kristine Naess as part of her Ph.D. research under the direction of Harry Jan Swartz. *R. cuneifolius* selection Crisfield x Shawnee; cross made in 1993; seed was germinated in vitro in 1994; selected in 1996; tested as NSKNA-1. USPPAF by the Universities of Maryland, Rutgers, and Wisconsin-River Falls and Virginia Polytechnic Institute Cooperative Bramble Breeding Program. **Fruit**: very large, with primary fruit 15 g; shape long; low acidity and high sweetness, even at the glossy-ripe stage; seed size medium to large and seed set is usually excellent; juicy and firm, although not as firm as Chester Thornless and Hull Thornless; ripens late, near Chester Thornless season. **Plant**: erect to slightly arching, moderately branched and vigorous canes with numerous large, somewhat recurved thorns; canes not hardy above southern Pennsylvania (or temperatures below -20 °C). No orange rust (*Gymnoconia nitens*) has yet to be observed on Chesapeake, however, some was observed on its siblings; propagules have been produced “true-to-type” from tissue culture, single-node cuttings, and root suckers.

**Gazda**.—A hardy, thorny blackberry with medium-sized fruits for fresh market and processing. **Origin**: Institute of Pomology and Floriculture, Fruit Experimental Station, Brzezna, Poland, by J. Danek. Selected as open-pollinated seedling of selected blackberry from the wild (*R. plicatus*?) in Poland; seed collected in 1985; selected in 1988; tested as P 85631. Preliminary protection by Research Center for Crop Testing, Poland. **Fruit**: medium; round; firm; attractive and glossy; excellent flavor; soluble solids 12.2%; ripens early, ≈7 days before Orkan. **Plant**: erect canes with small number of thorns; short internodes and very short inflorescence; productive; winter hardy in Polish climatic conditions (-25 °C); moderately susceptible to red spider mite (*Tetranychus urticae*).

**Guarani**.—A thorny, erect blackberry. **Origin**: Cross made at the Univ. of Arkansas with parentage [Lawton x (Darrow x Brazos)] x (Shaffer Tree x Brazos); seeds were brought to EMBRAPA/Clima Temperado, Pelotas, RS, Brazil; sel. by Alverides Santos and propagated under the name Guarani at EMBRAPA. Not patented or protected. **Fruit**: medium, 5–6 g; dark, uniform color; flavor sweet but prominent acidity also; firm; small seeds; ripens one week after Tupi. **Plant**: erect; thorny; vigorous and commonly suckers from the roots; low-chilling; productive with average production under Southern Brazil conditions of 3.6 kg/plant.

**Tupi**.—A thorny, large-fruited, erect blackberry. **Origin**: EMBRAPA/Clima Temperado, Pelotas, RS, Brazil, by Alverides Santos. A hybrid of a wild trailing blackberry from Uruguay x Comanche; cross made in 1982. Not patented or protected. **Fruit**: large, 7–9 g; firm; long; well-balanced flavor and sweetness/acidity; seeds smaller than many cultivars; ripens early to midseason. **Plant**: thorny; erect canes; vigorous plants with moderate suckering from the roots; productive with average production under Southern Brazil conditions of 3.8 kg/plant; is adapted to mild winter areas.

<sup>1</sup>Thanks to the crop editors for compiling this information. Individuals with varieties to describe should contact the crop editors directly. Individuals willing to serve as crop editors should contact W.R.O.

<sup>2</sup>USPPAF = U.S. Plant Patent Applied For; USPP = U.S. Plant Patent.

## BLUEBERRY

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**Alapaha.**—An early-ripening rabbiteye blueberry. **Origin:** selected in 1972 at the Coastal Plain Experiment Station in Tifton, Ga., from the cross T-65 x Brightwell made by Arlen Draper. Tested as T-256. Released in 2001 by the Univ. of Georgia and USDA. USPPAF. Propagation rights controlled by Georgia Seed Development Commission, 2420 S. Milledge Avenue, Athens, GA 30606. **Fruit:** medium size; excellent color and flavor; excellent firmness and small dry scars contribute to long postharvest life. Suitable for mechanical harvesting. **Plant:** vigorous, upright with a narrow crown. Flowers a week or more later than Climax in south Georgia, but ripens at about the same time as Climax. Consistently produces high yields. Chilling requirement 450–500 h. Leafing better than Climax, even following mild winters. Produces sufficient stems to renew the plant; somewhat susceptible to twig dieback. Propagates readily from softwood cuttings. Should be planted with other rabbiteye cultivars for cross pollination.

**Arlen.**—A self-fruitful, late-season southern highbush blueberry. **Origin:** from the cross G-144 x FL4-76 made by Arlen Draper in 1976. Full sibling to Ozarkblue and Summit. Tested as G-600. Introduced in 2001 by North Carolina State Univ. and USDA. **Fruit:** Recommended for hand harvest. Berry larger than Croatan and Legacy, excellent color and flavor; picking scar and firmness superior to Croatan and equal to Legacy. **Plant:** flowers about Croatan season; ripens two or three weeks after Croatan and a few days after Summit in southeastern North Carolina. Consistent production. Plant upright with good vigor. Resistant to stem blight and anthracnose (*Colletotrichum*) fruit rot. Fruit stores well.

**Augusta.**—A high-yielding lowbush blueberry, *Vaccinium angustifolium*. **Origin:** selected in 1933 at Frankfort, Maine, by Leslie Whitten of the Maine Agricultural Experiment Station. Released in 1975. **Fruit:** visually attractive, 1.0–1.2 cm diameter; good eating quality fresh or frozen. Berries mature uniformly in early to midseason. **Plant:** shoots are green, ≈18 cm high. Leaves 31 mm long and 17 mm wide. Flowers are self-incompatible, but pollen production is unusually good. The berries are borne mostly well off the ground where they can be hand-raked or harvested mechanically with minimum loss. Two-year-old plants at Kentville, Nova Scotia yielded 2,720 kg/ha and 4-year-old plants 8,420 kg/ha. Berries are uniform in size and mature uniformly in early to midseason. Susceptible to witches' broom disease (*Pucciniastrum goeppertianum*), but has been free of redleaf (*Exobasidium vaccinii*), blight (*Monilinia vaccinii-corymbosi*) and Botrytis fruit rot (*Botrytis cinerea*). Cuttings root readily under mist.

**Cara's Choice.**—A highbush blueberry with a sweet, aromatic flavor. **Origin:** released by USDA and N.J. Agricultural Experiment Station in 2000. Tested as G-695 and ARS 95-5. A seedling from the cross G-144 x US 165. Mostly northern highbush but also contains genes from *V. darrowi*, *V. constablaei*, and *V. ashei*. First selected in 1981 and subsequently evaluated in southern N.J. **Fruit:** ripens with Bluecrop, medium size, light blue, with small, dry scar and excellent firmness. Very sweet with balanced acidity and a superior flavor that is complex and aromatic. Yield lower than for Duke and Bluecrop. **Plant:** intermediate to low-growing bush, flowering time between Bluecrop and Duke, ripens midseason.

**Chanticleer.**—An early-ripening highbush blueberry. **Origin:** introduced in 1997 by M. Ehlenfeldt and N. Vorsa, USDA, Chattsworth, N.J., from the cross G-180 x Me-US 6620 made in 1974 by Arlen Draper. Full sibling of the cultivar Sunrise. Tested as G-481. Selected in 1978 from a seedling field grown in Hammonton, N.J. **Fruit:** early-ripening, fruit medium size, medium to light blue, with dry scar and good firmness. Sweet, subacid with mild flavor. Berry stores as well as Sunrise but not as well as Duke. **Plant:** upright, medium-height. Flowers after Weymouth but before Duke and Sunrise. Resistant to mummy berry blight in New Jersey.

**Cumberland.**—A high-yielding lowbush blueberry with excellent fruit flavor. **Origin:** selected from a native stand of lowbush

blueberry at West Brook, Cumberland County, Nova Scotia, in 1964. Tested in the Maritime Provinces, Quebec, and Maine under the number 510 and released in 1988. **Fruit:** medium size, ≈0.5 g/berry, globose, with a light bloom; has a small pedicel scar and a very good taste either fresh or frozen. Berries mature uniformly within the cluster in early midseason, 4 days after Brunswick and 4 days before Blomidon. **Plant:** moderate growth, up to 25 cm high. Foliage is medium green, with an elliptical leaf, 29 mm × 12 mm. Stems and leaf midribs pubescent. Flowers in the middle of the bloom period. Self-incompatible but has good pollen viability and is cross-compatible with several other clones. Yields average high over many years. Both open-pollinated seedlings and rooted cuttings have high productivity. Roots readily from softwood cuttings.

**Emerald.**—A high-yielding, low-chill southern highbush blueberry. **Origin:** from the cross FL 91-69 x NC 1528 made at the Florida Agricultural Experiment Station in 1989. Selected in 1993 at Gainesville, Fla. Tested as FL 95-209-A. Released in 2001. USPP 12165. **Fruit:** ripens a week later than Star, and equal to Sharpblue. Large, with excellent scar and firmness and sweet, subacid flavor. Color medium blue. **Plant:** vigorous, intermediate between spreading and upright, chilling requirement similar to Sharpblue, 200–300 h. Requires cross pollination for high fruit set. Appears to have good field resistance to phytophthora root rot, cane canker, and stem blight.

**Fundy.**—An extremely vigorous lowbush blueberry with large fruit. **Origin:** open-pollinated seedling of Augusta selected in 1969 at Kentville Research Centre, Nova Scotia, Canada. Tested in eastern Canada under the number 69-1 and released in 1988. **Fruit:** ovate, with a heavy bloom. Berry very large, averaging 0.72 g per berry, with the largest berries exceeding 1 g. Clusters of berries are held on upright stems, making hand harvesting efficient. The pedicel scar is medium and the calyx end is closed. Fresh flavor is good but not as intense as for Cumberland. Berries mature uniformly within the cluster in early midseason, ≈4 days after Brunswick and 4 days before Blomidon. **Plant:** extremely vigorous, with strong, erect sprouts reaching up to 40 cm in height. Leaves average 29 mm × 15 mm and are slightly glossy. Flowers in the middle of the bloom period with white corollas that are 6 mm long. Pollen production is good, but Fundy is self-incompatible. Roots readily from softwood cuttings.

**Hannah's Choice.**—A highbush cultivar with improved sweetness, firmness, and flavor. **Origin:** released by the USDA and the New Jersey Agricultural Experiment Station in 2000. Tested as G-805 and ARS 95-4. From the cross G-136 x G-358. One grandparent was a chalcicine-doubled plant of *V. atrococcum* selected from the wild in New Jersey. Seedling was selected and evaluated in New Jersey. **Fruit:** ripens at the same time as Duke. Sweet, subacid, and mild-flavored. Medium to large, medium to light blue, good scar and excellent firmness. **Plant:** upright bush with pink-tinged flowers. In New Jersey, yields average 60 to 70% of Duke and Bluecrop.

**Jewel.**—A lowchill southern highbush blueberry with a large berry. **Origin:** from a cross made at the Florida Agricultural Experiment Station in 1986. Seedling selected in Gainesville, Fla., in 1988 and released in 1999. Tested as FL 92-176. USPP 11807. **Fruit:** large, medium blue with good scar and firmness. Berry tart when first blue, becoming sweeter and less tart if allowed to remain on the bush for several days after color break. Early ripening; ripens ≈1 week before Sharpblue in north Florida. **Plant:** vigorous, somewhat spreading. Chilling requirement similar to Sharpblue, 200–300 h. Flowers ≈1 week before Sharpblue in Gainesville. Somewhat susceptible to stem blight and phytophthora root rot.

**Maru.**—A high-yielding, late-ripening rabbiteye blueberry. **Origin:** produced in New Zealand from open-pollinated seed of Premier obtained from an unknown source in the United States in the mid-1970s. This seed lot also gave rise to Rahi. The seedling was selected in New Zealand in 1989 by Narandra Patel, tested as G-5, and released in 1992 by the Horticulture and Food Research Institute of New Zealand. New Zealand Plant Variety Right #843. **Fruit:** large and firm, with moderate bloom and average rabbiteye flavor, which is enhanced if the fruit are not harvested immediately after they look ripe. In New Zealand, Maru ripens after Powderblue and Rahi and at the same time as Centurion. Berries handle and ship well and can be CA stored for up to 4 weeks. Maru has become a dominant rabbiteye

cultivar for supplying New Zealand export markets in February and March.

**Millennia.**—A high-yielding southern highbush blueberry with excellent fruit color. **Origin:** from the cross FL85-69 x O'Neal made at the Florida Agricultural Experiment Station in 1986. Two of the four grandparents of FL85-69 were native tetraploid *V. corymbosum* selected from the wild in northeast Florida. Selected in 1988 in Gainesville, Fla., tested as A-17, and released in 2001. USPPAF. **Fruit:** early-ripening; ripens in north Florida with Star, a week before Sharpblue. Large, light-blue color, with excellent scar and firmness. Flavor mild. **Plant:** vigorous, somewhat spreading. Produces numerous flower buds and is capable of producing high yields. Medium to good resistance to phytophthora root rot, stem blight, and cane canker. Chilling requirement similar to Star, ≈300 h.

**Onslow.**—A late-ripening rabbiteye blueberry. **Origin:** from the cross Premier x Centurion made by G.J. Galletta. Full sibling to Yadkin. Selected at Castle Hayne, North Carolina by James Ballington. Tested as NC 2013. Introduced in 2001 by North Carolina State Univ. **Fruit:** large, has excellent picking scar and firmness. Resistant to stemmings, fruit-scar tearing, and cracking. Color medium-blue, flavor is peasant and aromatic when allowed to fully ripen. Outstanding for high percent marketable fruit and low percent soft and decayed fruit even after seven days storage at 21 °C. Ripens with Powderblue. **Plant:** very upright, high vigor, ripens late midseason to late. Flowers at about the same time as Tifblue; could be used to cross-pollinate Powderblue and Tifblue. Self-fruitful. Appears to tolerate somewhat higher soil pH than typical blueberries and is more cold tolerant than most rabbiteye varieties.

**Rahi.**—A late-ripening rabbiteye blueberry. **Origin:** produced in New Zealand from open-pollinated seed of Premier obtained from an unknown source in the USA in the mid-1970s. This seed lot also gave rise to Maru. The seedling was selected in New Zealand in 1989 by Narandra Patel, tested as C-38, and released in 1992 by the Horticulture and Food Research Institute of New Zealand. New Zealand Plant Variety Right #844. **Fruit:** medium size, round, very firm, light blue, with excellent flavor. Ripens slightly after Powderblue but before Centurion and Maru in New Zealand. Has superior storage qualities and can be CA stored for up to 8 weeks. **Plant:** upright and vigorous with a noticeable pink-green foliage. Yield medium.

**Sapphire.**—A low-chill southern highbush blueberry with light-blue berry color. **Origin:** from a cross made at the Florida Agricultural Experiment Station in 1980. Selected in Gainesville, Fla., in 1982. Tested as FL84-37 in Sebring (Highlands County), Fla., and released in 1999. USPP 11829. **Fruit:** large, light-blue color, good scar, firmness, and flavor. Early-ripening; ripens a week before Sharpblue in south-central Florida. **Plant:** vigor medium, heavy flower-bud producer. Medium-upright, good resistance to phytophthora root rot, stem blight, and cane canker. May require winter pruning to prevent over-fruiting. Flowers a week before Sharpblue at Sebring; chilling requirement 200–300 h.

## CHERRY—TART

Amy F. Iezzoni

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East Lansing

**Balaton™.**—A late ripening morello-type *Prunus cerasus* cultivar. **Origin:** selected in Hungary by Petho Ferenc, Tibor Szabo, and Bertalan Pusztai. Tested in the United States by Amy Iezzoni, Michigan State Univ. **Fruit:** large; burgundy red skin, flesh and juice; dry stem scar; ripens ≈1 week later than Montmorency; firmer and sweeter than Montmorency. **Tree:** more vigorous than Montmorency; self-fertile.

**Danube™.**—An early ripening large sweet *Prunus cerasus* cultivar suitable for the fresh market. **Origin:** selected in Hungary by Maliga Pál from the cross Pándy x Nagy Angol. Tested in the United States by Amy Iezzoni, Michigan State Univ. **Fruit:** large, burgundy red skin, flesh and juice; firm; dry stem scar; sweeter than Montmorency; ripens early season, ≈1 week before Montmorency. **Tree:** spreading habit, moderate vigor; self-fertile; early bloom time; less cold hardy than Montmorency.

## CHERRY—SWEET

Gregory A. Lang

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**Andy G's Son.**—Very early-season dark red cherry. **Origin:** in Laton, Calif., by Robert Hurlbut. Introduced in 1996. USPP 10578; a sport of Early Burlat, sel. in 1992. **Fruit:** large, rounded; deep red skin color; firm, red flesh, with good slightly tart flavor; very early ripening, 5–7 days before Burlat; somewhat less susceptible to rain-induced splitting. **Tree:** self-infertile (*S* alleles unknown; Rainier and Black Tartarian recommended as pollenizers), blooms 5–7 days before Burlat; vigorous, upright and spreading growth habit; good productivity; well-adapted to warmer climates.

**BlackGold™.**—See Ridgewood.

**Cashmere™.**—Self-fertile, early-ripening dark red cherry. **Origin:** in Prosser, Wash., by Thomas Toyama and Ed Proebsting, Washington State Univ. Introduced in 1994. Propagation rights assigned to Northwest Nursery Improvement Institute. Stella x Early Burlat; cross made in 1971, sel. in 1976; tested as PC 7144-3. **Fruit:** medium-large; round to oblong, with medium slender stems; dark mahogany red skin; firm, dark red flesh, juicy with excellent flavor; more susceptible to rain-induced splitting than Bing; ripens 9–11 days before Van. **Tree:** self-fertile; blooms late, 3 days after Van; vigorous, spreading growth, with a horizontal branch habit; consistently very productive.

**Chelan™.**—Early-ripening dark red cherry, resistant to powdery mildew. **Origin:** in Prosser, Wash., by Thomas Toyama and Ed Proebsting, Washington State Univ. Introduced in 1991. USPP 8545; assigned to Washington State Univ. Research Foundation. Stella x Beaulieu; cross made in 1971, sel. in 1978; tested as PC 7146-23. **Fruit:** medium-large to large, smaller when overcropped; round to broadly cordate, with medium long slender stems; glossy, dark mahogany red skin; exceptionally firm, dark red flesh, juicy with good flavor at full ripeness; less than average susceptibility to rain-induced splitting; ripens 10–12 days before Van. **Tree:** self-infertile (*S<sub>3</sub>S<sub>6</sub>*), incompatible with Tieton and Burlat; blooms early, 3 days before Van; vigorous, upright-spreading growth habit; very productive; resistant to powdery mildew.

**Columbia™.**—Self-fertile midseason dark red cherry. **Origin:** in Prosser, Wash., by Thomas Toyama, Ed Proebsting, and Gregory Lang, Washington State Univ. Introduced in 2000. USPPAF; assigned to Washington State Univ. Research Foundation. Stella x Beaulieu; cross made in 1971, sel. in 1977; tested as PC 7146-8. **Fruit:** large, heart-shaped, with moderate length stems; dark red skin; firm, dark red flesh, with an excellent sweet-tart flavor; less than average susceptibility to rain-induced splitting; ripens midseason, with Van. **Tree:** self-fertile, blooms late, 3–5 days after Van; vigorous, upright growth habit; good productivity.

**Earlisweet.**—Very early-season red cherry. **Origin:** in Modesto, Calif., by Floyd Zaiger. Introduced in 1995. USPP 9783. Stella x op. **Fruit:** medium size, globose to slightly oblate, with short stems; red skin; moderately firm, pink to red flesh, good mild flavor; average susceptibility to rain-induced splitting; very early ripening, 23 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms early; vigorous, upright growth habit; very productive.

**Early Garnet™.**—See Early Red.

**Early King.**—Early-season, dark purple cherry well-adapted to warmer climates. **Origin:** in Kingsburg, Calif. by Shinichi Mukai. Introduced in 1996. USPP 10326; a sport of King. **Fruit:** medium size; dark purple skin; red flesh, with a mild sweet flavor; tolerates high temperatures that cause fruit doubles/spurs; early ripening, 10 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms slightly ahead of Van; vigorous, upright growth habit; very productive; well adapted to warmer climates.

**Early Red (Early Garnet™).**—Early-season dark red cherry, well-adapted to warmer climates. **Origin:** in Lodi, Calif., by Marvin Nies. Introduced in 1995. USPP 9368. Garnet x Ruby; cross made in 1976, sel. in 1982; tested as T 7-64-2. **Fruit:** moderately large, globose with prominent shoulders, with short thick stems; glossy dark red skin; very firm, dark red flesh, with good sweet flavor; tolerates high tempera-

tures that cause fruit doubles/spurs; very early ripening, 14 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms very early, 2 weeks before Van; moderate vigor, upright growth habit; precocious and productive.

**Firm Red (Late Garnet™).**—Very large, dark red cherry with excellent tolerance to rain-induced fruit splitting. **Origin:** in Lodi, Calif., by Marvin Nies. Introd. in 1995. USPP 9857. Large Red x Garnet; cross made in 1976, sel. in 1982; tested as T 6-324-6. **Fruit:** very large, globose with prominent shoulders, with moderately-long medium-thick stems; shiny red-black skin; very firm dark red flesh, with good sweet flavor; tolerates high temperatures that cause fruit doubles/spurs; excellent tolerance to rain-induced splitting; ripens early-midseason, 3 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms with or slightly ahead of Van; vigorous, upright to moderately spreading growth habit; good productivity.

**Garnet™.**—An early-midseason red cherry, well adapted to warmer climates. **Origin:** in Lodi, Calif., by Marvin Nies. Introd. in 1978. USPP 4431; Hardy Giant x Bing. **Fruit:** large, globose shape, with short stems; glossy red skin; red flesh, with excellent mild sweet flavor; average susceptibility to rain-splitting; early-midseason ripening, 6 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms early, 4 days before Van; vigorous, upright to spreading growth habit; very productive.

**Giant Red (Giant Ruby™).**—Very large, red cherry well-adapted to warmer climates. **Origin:** in Lodi, Calif., by Marvin Nies. Introd. in 1995. USPP 9659; Large Red x Ruby; cross made in 1976, sel. in 1982; tested as T 8-22-4. **Fruit:** very large, globose with prominent shoulders, with moderate length stems; shiny dark red skin; firm, dark red flesh, with excellent mild sweet flavor; tolerates high temperatures that cause fruit doubles/spurs; average susceptibility to rain-splitting; early-ripening, 8 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms a week before Van; moderately vigorous, open growth habit with wide-angled, pendulous branching; very good precocity.

**Giant Ruby™.**—See Giant Red.

**Glacier™.**—Self-fertile, very large midseason dark red cherry. **Origin:** in Prosser, Wash., by Thomas Toyama and Ed Proebsting, Washington State Univ. Introd. in 1990. USPP 8051; assigned to Washington State Univ. Research Foundation. Stella x Early Burlat; cross made in 1971, sel. in 1976; tested as PC 7144-7. **Fruit:** very large; broadly cordate to rounded, with long slender stems; glossy, dark mahogany red skin; moderately firm to soft, dark red flesh, juicy with an excellent sweet flavor; average susceptibility to rain-splitting; ripens 1–3 days before Van. **Tree:** self-fertile, blooms with or slightly after Van; vigorous, upright-spreading growth habit; moderately productive.

**Index™.**—Self-fertile, large early midseason dark red cherry. **Origin:** in Prosser, Wash., by Thomas Toyama and Ed Proebsting, Washington State Univ. Introd. in 1994. USPP 10459; assigned to Washington State Univ. Research Foundation. Stella x unknown; cross made in 1972, sel. in 1978; tested as PC 7222-1. **Fruit:** large; broadly cordate to rounded, with slender stems; glossy, dark mahogany red skin; firm, dark red flesh, juicy with a sweet, low acid flavor, edible when still pink; average susceptibility to rain-splitting; ripens 3–5 days before Van. **Tree:** self-fertile, blooms 3 days before Van; vigorous, upright-spreading growth habit; very productive.

**Large Red (Lodi™).**—A large, midseason dark red cherry of semi-dwarf vigor. **Origin:** in Lodi, Calif., by Marvin Nies. Introd. in 1995. USPP 9658; Hardy Giant x Berryessa; cross made in 1963, sel. in 1968; tested as MR 4-44. **Fruit:** very large, rounded globose shape, with long stems; dark red skin; firm, dark red flesh, with excellent sweet flavor; less than average susceptibility to rain-splitting; early-midseason ripening, 3 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms with Van; moderately vigorous, open growth habit with wide-angled, pendulous branching; very precocious and productive.

**Late Garnet™.**—See Firm Red.

**Liberty Bell™.**—Self-fertile, very large late-season dark red cherry. **Origin:** in Prosser, Wash., by Thomas Toyama, Ed Proebsting, and Gregory Lang, Washington State Univ. Introd. in 2000. USPPAF; assigned to Washington State Univ. Research Foundation. (Rainier x Bing) x Stella; cross made in 1970, sel. in 1977; tested as PC 7064-3.

**Fruit:** very large, round shape, with very long stems; dark red skin; firm, red flesh, with an excellent sweet flavor; average susceptibility to rain-splitting; late-ripening, 10–14 days after Van. **Tree:** self-fertile, blooms with or slightly ahead of Van; vigorous, upright growth habit; good productivity.

**Lodi™.**—See Large Red.

**Newfane (WhiteGold™).**—Self-fertile, midseason yellow cherry. **Origin:** in Geneva, N.Y., by Robert Andersen, Susan Brown, and Roger Way, Cornell Univ. Introd. in 2001. USPPAF; assigned to Cornell Research Foundation. Emperor Francis x Stella; cross made in 1975, sel. in 1984; tested as NY 13688. **Fruit:** large, oblong round shape, with moderate length stems; yellow skin with red blush; firm yellow flesh; less than average susceptibility to rain-induced splitting; midseason ripening, with or slightly before Van. **Tree:** self-fertile, blooms with Van; moderate vigor, upright growth habit; good tolerance to bacterial canker (*Pseudomonas*).

**Olympus™.**—Late midseason dark red cherry. **Origin:** in Prosser, Wash. by Thomas Toyama and Ed Proebsting, Washington State Univ. Introd. in 1990. USPP 8033; assigned to Washington State Univ. Research Foundation. Lambert x Van; cross made in 1966, sel. in 1977; tested as PC 6659-2. **Fruit:** large, heart-shaped with a pronounced suture ridge, with moderate length stems; glossy, dark mahogany red skin; firm, dark red-black flesh, juicy with low acid flavor; average susceptibility to rain-induced splitting; late midseason ripening, 5–7 days after Van. **Tree:** self-infertile (*S<sub>1</sub>S<sub>2</sub>*) incompatible with Van and Olympus; blooms late, 3–5 days after Van; vigorous, spreading growth habit; very productive.

**Red Crystal.**—Self-fertile, very early-season dark red cherry. **Origin:** in Reedley, Calif., by Hideki Otani. Introd. in 1994. USPP 9787. Chance seedling; sel. in 1988, tested as P-75. **Fruit:** medium size, broadly to somewhat oblate shape, with medium length stems; bright glossy, dark red skin; moderately firm, pink-to-red flesh, with a mild slightly tart flavor; very early-ripening, 22–24 days before Van. **Tree:** self-fertile, blooms slightly earlier than Van; vigorous, upright to upright-spreading growth habit; well-adapted to warmer climates.

**Regina.**—Late-season dark red cherry, with excellent tolerance to rain-induced fruit splitting. **Origin:** in Jork (Hannover), Germany, by Karl-Heinz Tiemann at the Fruit Experiment Station, Jork. Introd. in 1998. USPP 11530; assigned to Jork Fruit Research Station. Schneiders Spate Knorpelkirsche x Rube; tested as Jork 57/201. **Fruit:** large, slightly heart-shaped, with moderate length stems; attractive dark red skin; very firm, dark red flesh with very good sweet-tart flavor; excellent tolerance to rain-induced splitting; late ripening, 12–16 days after Van. **Tree:** self-infertile (*S<sub>1</sub>S<sub>2</sub>*), incompatible with Van and Olympus, blooms late, 4–6 days after Van; vigorous, upright growth habit; moderate precocity and productivity.

**Ridgewood (BlackGold™).**—Self-fertile, midseason dark red cherry. **Origin:** in Geneva, N.Y., by Robert Andersen, Susan Brown, and Roger Way, Cornell Univ. Introd. in 2001. USPPAF; assigned to Cornell Research Foundation. Starks Gold x Stella; cross made in 1975, sel. in 1984; tested as NY 13791. **Fruit:** large, round shape, with long stems; dark red skin; firm red flesh; average susceptibility to rain-induced splitting; midseason ripening, with Van. **Tree:** self-fertile, late blooms, 4–5 days after Van; moderate vigor, spreading growth habit.

**Royal Rainier.**—Early-season, productive, blushed yellow cherry. **Origin:** in Modesto, Calif., by Floyd Zaiger. Introd. in 1997. USPP 10790. (Stella op) op. **Fruit:** medium to large, globose to slightly oblate, with moderate stem length; yellowish-white skin, with a reddish blush with exposure to sun; firm, yellow flesh, good mild flavor; early ripening, ≈5 days before Van. **Tree:** self-infertile (*S* alleles unknown), blooms with Van; vigorous, upright growth habit; very productive.

**Ruby.**—Early season dark red cherry, with excellent tolerance to rain-induced fruit splitting. **Origin:** in Lodi, Calif., by Marvin Nies. Introd. in 1978. USPP 4436. Hardy Giant x Bush Tartarian. **Fruit:** moderately large, globose to slightly cordate, with short stems; glossy red skin; fairly firm, dark red flesh, with a sweet flavor; excellent tolerance to rain-induced splitting; very early ripening, after Burlat but before Van. **Tree:** self-infertile (*S* alleles unknown), blooms early,

before Van; moderate vigor, upright to spreading growth habit; precocious and very productive.

**Scarlet.**—Very large, early-midseason dark red cherry, well-adapted to warmer climates. **Origin:** in Patterson, Calif., by Ciro Mancuso. Introd. in 1995. USPP 9723. Chance seedling in 1975; sel. in 1982, tested as 7506B. **Fruit:** very large, globose to slightly oblate shape, with short thick stems; glossy, red-purple skin; very firm, red to purple flesh, excellent sweet flavor; excellent tolerance to rain-induced splitting; ripens early-midseason, 6 days before Van. **Tree:** self-infertile (*S* alleles unknown; Tulare recommended as pollinizer), blooms early, 6 days before Van; moderate vigor, upright growth habit; precocious and very productive; well-adapted to warmer climates.

**WhiteGold™.**—See Newfane.

## CHERRY—ROOTSTOCK

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**Gisela® 1.**—Very dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1994. Propagation rights assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus fruticosa* Klon 64 x *Prunus avium*; tested as Gi 172-9. **Plant:** triploid, dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~25% to 35% compared to F12/1 Mazzard. Induces early fruiting of sweet cherry scions compared to mazzard. Anchorage is poor, requiring tree support; small tree amenable to pot culture; exceptionally high yield efficiency, but heavy cropping can reduce fruit size; requires close management to retain good vigor and fruit size. Hypersensitive to pollen-borne viruses like *Prunus necrotic ringspot virus* and *Prune dwarf virus*, and possibly others. Readily propagated by greenwood cuttings and micropropagation. Ungrafted tree is somewhat similar to *Prunus fruticosa*.

**Gisela® 4.**—Very dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1996. Propagation rights assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus avium* x *Prunus fruticosa*; tested as Gi 473-10. **Plant:** triploid, dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~35% to 40% compared to F12/1 Mazzard. Induces early fruiting of sweet cherry scions compared to mazzard. Hypersensitive to pollen-borne viruses like *Prunus necrotic ringspot virus* and *Prune dwarf virus*, and possibly others. Propagated by greenwood cuttings and one of the easiest stocks to propagate by microtechniques. Grafted trees are nonsuckering. Ungrafted tree is similar to *Prunus fruticosa*.

**Gisela® 5.**—Dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1996. USPP 9622; assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus cerasus* Schattenmorelle x *Prunus canescens*; tested as Gi 148-2. **Plant:** triploid, dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~40% to 50% compared to F12/1 Mazzard. Induces early fruiting of sweet cherry scions compared to mazzard; wide-angled branching and greater lateral branching are induced in all scion cultivars. Nonsuckering and no known sensitivities to pollen-borne viruses. Ungrafted tree is similar to *Prunus canescens*.

**Gisela® 6.**—Semi-dwarfing to vigorous, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1994. USPP 8954; assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus cerasus* Schattenmorelle x *Prunus canescens*; tested as Gi 148-1. **Plant:** A triploid, semi-dwarfing to full-size rootstock for sweet and tart cherries; grafted mature tree size ranges from 60% to 95% compared to F12/1 Mazzard, depending on scion cultivar and orchard environment. Induces early fruiting of sweet cherry scions compared to mazzard; wide-angled branching and greater lateral branching are

induced in all scion cultivars. Nonsuckering and no known sensitivities to pollen-borne viruses. Readily propagated by greenwood cuttings and in micropropagation. Ungrafted tree is similar to *Prunus canescens*.

**Gisela® 7.**—Semi-dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1994. USPP 8852; assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus cerasus* Schattenmorelle x *Prunus canescens*; tested as Gi 148-8. **Plant:** semi-dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~50% to 65% compared to F12/1 Mazzard. Induces early fruiting of sweet cherry scions compared to mazzard; wide-angled branching and greater lateral branching are induced in all scion cultivars. Sensitive to the pollen-borne virus *Prunus necrotic ringspot*. Readily propagated by greenwood cuttings and in micropropagation. Grafted trees sucker moderately to profusely. Ungrafted tree is similar to *Prunus canescens*.

**Gisela® 8.**—Semi-dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1996. USPP 9623; assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus cerasus* Schattenmorelle x *Prunus canescens*; tested as Gi 148-9. **Plant:** A semi-dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~50% to 65% compared to F12/1 Mazzard. Induces early fruiting of sweet cherry scions compared to mazzard; wide-angled branching and greater lateral branching are induced in all scion cultivars. Sensitive to the pollen-borne virus *Prunus necrotic ringspot*. Anchorage is not as strong as *Gisela® 6* or *Gisela® 7*. Readily propagated by greenwood cuttings and in micropropagation. Grafted trees sucker moderately. Ungrafted tree is similar to *Prunus canescens*.

**Gisela® 10.**—Semi-dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1994. Propagation rights assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus fruticosa* Klon 64 x *Prunus cerasus* Schattenmorelle; tested as Gi 173-9. **Plant:** triploid, dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~60% to 70% compared to F12/1 Mazzard. Induces early fruiting of sweet cherry scions compared to mazzard; Montmorency fruiting is better on a per tree efficiency basis and begins sooner than trees on mahaleb. Hypersensitive to pollen-borne viruses like *Prunus necrotic ringspot virus* and *Prune dwarf virus*, and possibly others. Readily propagated by greenwood cuttings and in micropropagation. Grafted trees are quite adaptable to different soil types; sucker profusely; winter injury to roots and ground level crown area severe in some climates.

**Gisela® 11.**—Semi-dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1996. USPP 9630; assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus canescens* x *Prunus cerasus* Leitzkauer; tested as Gi 195-1. **Plant:** triploid, semi-dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~65% to 75% compared to F12/1 Mazzard. Induces fruiting of sweet cherry scions earlier than mazzard; Montmorency fruiting begins earlier than trees on mahaleb. Hypersensitive to *Prune dwarf virus* and sensitive to *Prunus necrotic ringspot virus*. Susceptible to crown rot (*Phytophthora cactorum*) but less so than common mahaleb stocks used in the U.S. Readily propagated by greenwood cuttings and in micropropagation. Ungrafted tree is similar to *Prunus canescens*.

**Gisela® 12.**—Semi-dwarfing, precocious rootstock. **Origin:** at Giessen, Germany, by W. Gruppe and H. Schmidt, Justus Liebig Univ. Introd. in 1996. USPP 9631; assigned to Interplant Patent Marketing, Inc., Niagara-on-the-Lake, Ont., Canada. *Prunus canescens* x *Prunus cerasus* Leitzkauer; tested as Gi 195-2. **Plant:** triploid, semi-dwarfing rootstock for sweet and tart cherries; grafted mature tree size is ~70% to 80% compared to F12/1 Mazzard. Induces fruiting of sweet cherry scions earlier than mazzard; Montmorency fruiting begins earlier than trees on mahaleb. Nonsuckering and no known sensitivities to pollen-borne viruses. Readily propagated by greenwood cuttings and in micropropagation. Ungrafted tree is similar to *Prunus canescens*.

## CURRANT

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**Ben Gairn.**—Early ripening, reversion-resistant black currant. **Origin:** developed in Scotland by Rex Brennan of the Scottish Crop Research Institute, Invergowrie, Dundee. Ben Alder x Golubka. Tested as F4/1/67; introduced in 1997. Plant variety rights in Europe are held by SmithKline Beecham Plc. **Fruit:** quality is good for juice although vitamin C content is lower than in some black currants. Berry size is fairly large. **Plant:** growth habit is compact and flowering is early, ≈7 days before Ben Lomond. May risk frost damage in some years. Harvest is 8–10 days before Ben Lomond. Resistant to foliar diseases.

**Ben Hope.**—Gall mite-resistant black currant. **Origin:** developed in Scotland by Rex Brennan of the Scottish Crop Research Institute, Invergowrie, Dundee. Complex cross between [Westra x (238/36 x EM21/15)] Introduced in 1997. Tested as C1/9/10. Plant variety rights in Europe are held by SmithKline Beecham Plc. **Fruit:** medium-sized berries. Yields are consistently high. The fruit is acceptable for commercial juicing and has good sensory quality. **Plant:** very vigorous, upright-growth with resistance to black currant gall mite. Resistance is based on the *Ce* gene from gooseberries. May be suitable for low-input growing systems. Flowers two days after, and is harvested as much as ten days later, than Ben Lomond. Has resistance to powdery mildew (*Sphaerotheca mors-uvae*) and leaf spot (*Drepanopeziza ribis*).

**Tiben.**—Midseason black currant for mechanical harvesting. **Origin:** developed in Poland by Stanislaw Pluta and Edward Zurawicz of the Fruit Breeding Dept., Research Institute of Pomology and Floriculture, Skierniewice. Titania x Ben Nevis. Cross made in 1987; selected in 1993; tested as PC-78 or 26C/8; introduced in 1996; registered in 2000. Plant breeding rights in Poland. **Fruit:** medium-size on short and medium-long strigs, very firm with high acid, juice color and vitamin C content. Good for juice processing and concentrate. **Plant:** medium size with erect habit. Tends to spread under the weight of ripe fruit. Highly productive. Plants have adequate new basal growth. Flowers and ripens in midseason, similar to Ben Lomond. Winter hardy. Recommended for mechanical harvest. Resistant to powdery mildew (*S. mors-uvae*), but susceptible to leaf spot (*D. ribis*), white pine blister rust (*Cronartium ribicola*), and black currant gall mite (*Cecidophyopsis ribis*).

**Tisel.**—Early ripening black currant for fresh and commercial markets. **Origin:** developed in Poland by Stanislaw Pluta and Edward Zurawicz of the Fruit Breeding Department, Research Institute of Pomology and Floriculture, Skierniewice. Titania x self pollinated. Cross made in 1987; selected in 1993; tested as PC-84 or 30B/1; introduced in 1996; registered in 2000. Plant breeding rights in Poland. **Fruit:** medium-size to large, on medium to long strigs. Good taste with high sugar, low acid, middle to high juice color and high vitamin C content. High productivity. **Plant:** vigorous, upright habit with a tendency to spread. Flowering and ripening seasons are 7–8 days earlier than those of Ben Lomond. Winter hardy. Resistant to powdery mildew (*S. mor-uva*); highly resistant to white pine blister rust, *C. ribicola*, and moderately susceptible to leaf spot (*D. ribis*) but susceptible to gall mite (*C. ribis*).

## GRAPE

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**Diamond Muscat.**—An early-season, white, seedless raisin grape. **Origin:** developed by David Ramming and Ronald Tarailo, USDA Horticultural Crops Research Laboratory, Fresno, Calif. A-13-2 x B2-11; cross made in 1985; sel. in 1989; tested as C96-54; introd. in 2000; not patented. **Fruit:** white; medium, 1.8-2.2 g; oval; ripens with or slightly ahead of Fiesta; sweet with a pleasant, fruity, muscat flavor that remains when the fruit is dried; sugar content 22%; skin medium-thick and adheres to flesh; berries contain one to two aborted seeds

which are small and rarely noticeable; raisin quality similar to Fiesta; can be dried on the vine following cane cutting or harvested for drying in trays. **Cluster:** medium to large, 250–350 g; conical with shoulder; well-filled to slightly loose. **Vine:** very productive, averaging 2.1 clusters per shoot; a “T” trellis recommended to spread fruiting canes to allow more air circulation when drying fruit on cut canes.

**Kandiyo.**—A hardy, blue, seeded table grape. **Origin:** developed by Elmer Swenson, Osceola, Wis. Parentage not provided; tested as E.S. 414; introd. in 2000; not patented. **Fruit:** blue; round; large to very large; sugar content 20%; flavor is fruity, mild American; slipskin; skin; ripe 15 Sept. in central Minnesota. **Cluster:** medium to large (250 g); blocky usually without a shoulder; medium to well-filled. **Vine:** hardy to –32 °C; medium vigor; healthy and disease resistant.

**La Crescent.**—A midseason, white wine grape. **Origin:** developed by Peter Hemstad and James Luby, Univ. of Minn., Horticultural Research Center, Excelsior, Minn. St. Pepin x E.S. 6-8-25 (*V. riparia* x Muscat Hamburg); cross made in 1988; sel. in 1992; tested as MN 1166; introd. in 2001; USPPAF. **Fruit:** amber; small to medium, averaging 1.3 g; round; flavor fruity but not foxy; sugar content averages 24.5% and acid content averages 1.19% titratable acidity; pH averages 3.00; average harvest date 26 Sept. at Excelsior, Minn. Berry splitting and botrytis have not been observed even under wet conditions. **Cluster:** medium, averaging 87 g; slightly loose to loose and conical with shoulder. **Vine:** very cold hardy, trunks have survived –38 °C; low susceptibility to powdery mildew and black rot, moderate susceptibility to downy mildew (on the leaves) and foliar phylloxera; moderate vigor and yield. Wine is of excellent quality when finished in a semi-sweet style; apricot, citrus, and pineapple aromas with no herbaceous or labrusca aromas; golden yellow color; Germanic character reminiscent of Vignoles or Riesling.

**Louise Swenson.**—A hardy, white wine grape. **Origin:** developed by Elmer Swenson, Osceola, Wis. E.S. 2-3-17 x Kay Gray; cross made in 1980; sel. in 1984; tested as E.S. 4-8-33; introd. in 2001; named after Mr. Swenson’s wife, Louise; not patented. **Fruit:** yellow-gold when fully ripe; round; 3 g; soluble solids rarely exceed 20% even under hot conditions and acidity moderate; ripens in early-mid September in St. Paul, Minn. **Cluster:** small-medium (70–130 g); slightly loose, with no shoulder; unlike its pollen parent Kay Gray the clusters hang free of the tendrils. **Vine:** hardy and reliable survival to –35 °C and observed at several sites in southern Minnesota and western Wisconsin and has suffered little winter injury at –40 °C; breaks bud relatively late in the spring relative to other interspecific hybrids; growth habit is trailing to semi-upright and a bilateral cordon trellis system works well with this cultivar; disease resistance is excellent with only a slight susceptibility to anthracnose; has shown some sensitivity to droughty conditions, so may benefit from irrigation on dry sandy soils in dry years; perfect flowers. Use is a wine grape as wine has been remarkable for consistency and repeatable quality from year to year. Wine aroma of honey and flowers and acidity is moderate and needs no reduction. Wine tends to be light in body and short on finish but extremely complementary in a blend with Prairie Star. The latter fills in the body and finish and produces an excellent balanced and complex dry table wine in a style reminiscent of a white Burgundy.

**Petite Jewel.**—A hardy, red, early-ripening seedless table grape. **Origin:** developed by Elmer Swenson, Osceola, Wis. MN 78 x Canadice; sel. in 1984; tested as E.S. 3-20-36; introd. in 2000; not patented. **Fruit:** red; round; small; sugar content 21%; flavor is rich and spicy similar to Canadice; small seed remnants; very early, with harvest 5 Sept. in central Minnesota. **Cluster:** small to medium; conic with shoulder; well-filled. **Vine:** hardy to –35 °C; medium-high vigor; resistant to downy mildew and black rot. I addition to table grape use, it might be used for a blush wine also.

**Prairie Star.**—A hardy, white wine grape. **Origin:** developed by Elmer Swenson, Osceola, Wis. E.S. 2-7-13 x E.S. 2-8-1; cross made in 1980; sel. in 1984; tested as E.S. 3-24-7; introd. in 2000; not patented. **Fruit:** yellow; round; 2.5 g; sugar content 21% to 22%; acidity moderate; flavor is fruity but not foxy; harvest third week in September in St. Paul, Minn. **Cluster:** long, somewhat tight cluster with characteristic “bend” to one side; 120–240 g. **Vine:** winter hardy to –35 °C; original seedling had more than 50% bud survival after a midwinter low of –40 °C and in subsequent –40 °C winters survival has

been good at some sites and less so at others; upright to semi-upright growth habit and shoots are prone to wind damage; adapted to low cordon with vertical shoot positioning; generally disease resistant with moderate susceptibility to black rot and anthracnose; perfect flowers. Use is as a neutral, non-foxy wine grape; however, in some years can have a delicate floral nose. Wine has excellent body and finish and is a useful blending component to add these characteristics to thinner whites. Blends exceptionally well with Louise Swenson, which is why the two cultivars were released together.

**Selma Pete.**—An early season, white seedless raisin grape. **Origin:** developed by David Rammung and Ronald Tarailo, USDA Horticultural Crops Research Laboratory, Fresno, Calif. C66-144 x DOVine; cross made in 1988; sel. in 1991; tested as C51-110; introd. in 2001; not patented. **Fruit:** white; medium, 2.0 g; ripens early, one week before DOVine and two weeks before Fiesta; sugar content 21% or higher; skin medium-thick and adheres to flesh; berries contain one to two aborted seeds which are small and rarely noticeable; raisin quality when dried on trays better than Thompson Seedless and Fiesta; can be dried on the vine following cane cutting and mechanically harvested, or harvested for drying in trays; not recommended for fresh fruit use due to potential development of astringent flavor. **Cluster:** medium; conical; well-filled. **Vine:** moderate vigor; productive, similar to Fiesta and more productive than DOVine or Thompson Seedless; a "T" trellis recommended to spread fruiting canes to allow more air circulation when drying fruit on cut canes; 4-5 canes should be retained at pruning.

**Sugrafourteen.**—A red, seedless table grape. **Origin:** spontaneous mutation of Sugraone (Superior Seedless); discovered by Harry J. Newby, Jr., near Thermal, Calif., on 26 June 1991; evaluated and propagated by David W. Cain; USPP 11245; 29 Feb. 2000; assigned to Sun World International. **Fruit:** red; large, 5.2 g; obtuse ovate; ripens early, with Sugraone; sugar content 16% to 18%; low acid; flavor neutral to faint muscat when fully ripened; skin thick and adheres to flesh; berries contain average of 1.6 aborted seeds which are small and not noticeable when eaten; berry difficult to color unless exposed to sunlight. **Cluster:** large, 1201 g; cylindrical and conical; loosely compact. **Vine:** vigorous on its own roots; average productivity, yielding slightly less than Sugraone; requires cane pruning as basal buds are not sufficiently fruitful for commercial yields.

**Sugrafifteen.**—A white, seedless table grape. **Origin:** developed by David Cain, Sun World International, Bakersfield, Calif.; Dawn Seedless x Flame Seedless; cross made in 1988, sel. in 1990 in Wasco, Kern Co. Calif. USPP 11727; 26 Dec. 2000; assigned to Sun World International. **Fruit:** white (yellow-green); large, 3.7-4.1 g, but up to 7.6 g berry with girdling and gibberellic acid application; round to slightly ovate; ripens near Thompson Seedless; sugar content 21.0%; low acid; flavor neutral; medium skin thickness and adheres to flesh; very firm which are strongly attached to a well-lignified rachis; rudimentary seeds of  $\approx 7.4$  mg fresh weight. **Cluster:** large, 807 g; circular; dense. **Vine:** medium-vigor; very productive, up to 28 kg/vine; can be pruned to two-bud spurs.

**Sugrasixteen.**—A black, seedless, muscat-flavored table grape. **Origin:** developed by David Cain, Sun World International, Bakersfield, Calif.; Black Monukka x Sugrafive; cross made in 1988, sel. in 1991 in Wasco, Kern Co. Calif. USPP 11749; 23 Jan. 2001; assigned to Sun World International. **Fruit:** black; medium, 3.2 g; ovate to obtuse-ovate; ripens  $\approx 10$  days before Thompson Seedless; sugar content 21.0%; low acid; strong, fruity, muscat flavor; thick skin and adheres to flesh; berries strongly attached to a well-lignified rachis; resistant to cracking; rudimentary seeds of  $\approx 6.1$  mg fresh weight. **Cluster:** large, 709 g; conical; very dense. **Vine:** medium-vigor; very productive, up to 28 kg/vine when spur pruned.

**Sugraeighteen.**—A white, seedless, muscat-flavored table grape. **Origin:** developed by David Cain, Sun World International, Bakersfield, Calif.; Redglobe x 069-172 (Muscat Alexandria x Sugraone); cross made in 1990, sel. in 1992 in Wasco, Kern Co., Calif. USPP 11820; 27 Mar. 2001; assigned to Sun World International. **Fruit:** white (green); medium to large, 5.4 g but can attain an average weight of 11.5 g with girdling and gibberellic acid application; round; ripens  $\approx 10$  days after Thompson Seedless; sugar content 15.0%; very low acid; mild to musky muscat flavor, similar to Italia; thin skin and

adheres to flesh; tendency to crack at stylar end in some years; rudimentary seeds of  $\approx 2.9$  mg dry weight. **Cluster:** large, 714 g; conical; medium-dense. **Vine:** vigorous; very productive, up to 28 kg/vine when spur pruned.

**Summersweet.**—A hardy, blue, early-ripening juice and table grape. **Origin:** developed by Elmer Swenson, Osceola, Wis. E.S.2-4-13 x E.S. 2-5-5; cross made in 1981; sel. in 1985; tested as E.S. 5-4-35; introd. in 2000; not patented. **Fruit:** dark blue; round; small to medium size; sugar content 20%; flavor is pleasant, mild American; juicy flesh; ripens very early, 5 Sept. in central Minnesota; hangs well on the vine. **Cluster:** small to medium; cylindrical to conic; well-filled to compact. **Vine:** hardy to  $-39$  °C; low vigor; very resistant to downy mildew and black rot.

**Trollhaugen.**—A hardy, blue, seedless table grape. **Origin:** developed by Elmer Swenson, Osceola, Wis. MN 78 x Venus; sel. in 1985; tested as E.S. 3-24-7; released in 2000; not patented. **Fruit:** blue; round; small to medium size; sugar content 22%; flavor is fruity American but mild; seedless with soft seed remnants; medium skin; ripens 10 Sept. in central Minnesota. **Cluster:** small to medium; cylindrical, semi-loose. **Vine:** hardy to  $-38$  °C; high vigor; resistant to downy mildew and black rot.

## NECTARINE

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**Arrington.**—Yellow, non-melting fleshed nectarine. **Origin:** Fayetteville, Ark. J.N. Moore and J.R. Clark, Univ. Arkansas; Ark.178 x Ark. 232; sel. in 1989; tested as Ark. 417; introd. in 2000 by J.R. Clark and J.N. Moore. USPPAF. **Fruit:** medium size (100 to 120 g); round; skin is 60% red over a golden-yellow ground; very firm flesh of orange-yellow color with no red; clingstone pit; very good flavor. Ripens 24 June at Clarksville, AR, 6 days before Redhaven peach. **Tree:** vigorous, semi-spreading, self-fertile, and very productive. High flower bud set. Leaves have small globose glands. Flowers are non-showy and pink. Leaves and fruit are slightly susceptible to bacterial spot. Chilling requirement is 750 chill units. (HortScience 36:1164-1167).

**Bradley.**—Yellow, non-melting fleshed nectarine. **Origin:** Fayetteville, Ark. by J.N. Moore, R.C. Rom, and J.R. Clark, Univ. of Arkansas; (Ark. 190 x Ark. 178) op; sel. in 1988; tested as Ark. 402; introd. in 2000 by J.R. Clark, J.N. Moore and R.C. Rom. USPPAF. **Fruit:** medium-large size (140 to 170 g); round; skin is 60% red over a golden-yellow ground; very firm flesh of orange-yellow color with no red; clingstone pit; good flavor, but with some processing peach component in the flavor profile. Ripens 29 June at Clarksville, Ark., near that of Redhaven peach. **Tree:** vigorous, semi-spreading, self-fertile and productive. High flower bud set. Leaves have small reniform glands. Flowers are non-showy and pink. Leaves and fruit are resistant to bacterial spot. Chilling requirement is 750 chill units. (HortScience 36:1164-1167).

**Candy Gold.**—Yellow-fleshed, sub-acid, clingstone, nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford and N.G. Bradford. Red Glen (USPP 7193) x an unnamed white-fleshed nectarine. Introduced in 2000 as USPP 12705. **Fruit:** globose, uniform, symmetrical to slightly unsymmetrical, medium, very dark red to strong red over a very slight orange yellow. Flesh very firm, crisp, brilliant orange-yellow, clingstone. Flavor very good, sub-acid, sweet. Ripens in late July in LeGrand, Calif., with Red Glen. **Tree:** upright, large, vigorous, productive. Flowers large (47.6 mm), showy, pale purplish pink, self-fertile. Leaf glands globose, opposite.

**Candy Sweet.**—Yellow-fleshed, sub-acid, very firm, clingstone nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford and N.G. Bradford. Red Diamond (USPP 3165) x an unnamed yellow-fleshed nectarine. Introduced in 2000 as USPP 12702. **Fruit:** globose, uniform, symmetrical, large; very dark red over orange red with brilliant orange yellow where sun protected. Flesh very firm, crisp, brilliant yellow, clingstone. Flavor very good, sub-acid, sweet. Ripens in late

June in LeGrand, Calif., with Red Diamond. **Tree:** upright, vigorous, large, productive. Flowers large (44.5 mm), showy, moderate pink, self-fertile. Leaf glands reniform, alternate.

**Crimson Pearl.**—White-fleshed, sub-acid, very firm, clingstone nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford and N.G. Bradford. Open-pollinated seedling of an unnamed white-fleshed nectarine. Introduced in 2000 as USPP 12711. **Fruit:** Globose, slightly compressed, mostly symmetrical, uniformly large, very dark red over moderate red with a background of pale yellow. Flesh very firm, crisp, yellowish-white, clingstone. Flavor very good, sub-acid and very sweet. Ripens in early August in LeGrand, Calif., 2 weeks after Bright Pearl (USPP 12711). **Tree:** upright, vigorous, medium sized, productive. Flowers large (44.5 mm), showy, grayish purple pink, self-fertile. Leaf glands globose, some alternate and some opposite.

**Diamond June.**—Yellow-fleshed, acidic, clingstone nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford. Diamond Ray (USPP 8948) x an unnamed seedling. Introduced in 2001 as USPP 12968. **Fruit:** globose, uniform and medium, full dark red blush. Flesh firm, crisp, clingstone, yellow with a slight amount of deep red flecking around the pit cavity, acidic and sweet, very good flavor. Ripens in the third week of June in LeGrand, Calif., ≈16 days before Diamond Ray. **Tree:** spreading, medium, vigorous, productive. Flowers large (47.6 mm), showy, light purplish pink, perfect, self-fertile. Leaf glands globose, alternate.

**Grand Candy.**—Yellow-fleshed, sub-acid, clingstone, nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford. Red Diamond (USPP 8918) x unnamed seedling. Introduced in 2001 as USPP 12955. **Fruit:** Globose, uniform and large, 100% of surface covered with a dark red blush. Flesh; firm, crisp, clingstone, yellow, sub-acid and sweet, very good flavor. Ripens the third week of July in LeGrand, Calif., 12 days after Red Diamond. **Tree:** spreading, medium, vigorous, productive. Flowers large (47.6 mm), showy, pale purplish pink, self-fertile. Leaf glands globose, alternately positioned.

**Grand Sweet.**—White-fleshed, sub-acid, very firm, clingstone nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford. Red Glen (USPP 7193) x June Pearl (USPP 9360). Introduced in 2001 as USPP 12954. **Fruit:** Globose, uniform, mostly symmetrical, medium sized; very dark red smoothly blending into deep red (almost 100%). Flesh very firm, crisp, brilliant yellow, clingstone. Flavor very good, sub-acid, very sweet. Ripens in late July in LeGrand, Calif., 10 days after Red Glen. **Tree:** Upright, medium sized, vigorous, productive. Flowers large (47.6 mm), showy, pale purplish pink, self-fertile. Leaf glands reniform, alternately positioned.

**Honey Royale.**—Yellow-fleshed, sub-acid, freestone nectarine. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner and G.G. Zaiger. Seedling 77GF213 nectarine x Honey Kist nectarine (USPP 9333). Introduced in 2001 as USPP 12008. **Fruit:** Near globose, slightly elongated, large, almost 3 inches in diameter; yellow to golden yellow ground color overspread with currant red to Turkish red. Flesh firm, meaty, sub-acid moderately sweet, freestone with excellent flavor. Ripens during the second week of July in Modesto, Calif., 25 days after Honey Kist. **Tree:** upright, large, vigorous, productive. Flowers large, showy, pink to light pink, self-fertile. Leaf glands nearly orbicular and alternately positioned.

**June Candy.**—Yellow-fleshed, sub-acid, clingstone nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford, Unnamed white-fleshed nectarines x Ruby Diamond (USPP 7918). Introduced in 2001 as USPP 12950. **Fruit:** globose, uniform, symmetrical, large; very dark red blending into moderate red orange with brilliant orange yellow ground color. Flesh very firm, crisp, brilliant orange yellow with some dark red toward skin, clingstone. Flavor excellent, sub-acid, sweet. Ripens in late June to early July in LeGrand, Calif., 7 days before Spring Sweet. **Tree:** upright, medium, vigorous, productive. Flowers large (47.6 mm), showy, light purplish pink, self-fertile. Leaf glands reniform, alternately positioned.

**Prima Diamond 19.**—Yellow-fleshed, early midseason, clingstone nectarine. **Origin:** Reedley, Calif., by M.R. Gerawan; open-pollinated seedling. Introduced in 2001 as USPP 12011. **Fruit:** slightly oblong, mostly symmetrical, generally large and uniform, 40% to 80% red overlay blush, with yellow ground color. Flesh: firm, crisp, golden yellow, some red streaks, clingstone. Flavor good, sweet, slightly

acidic. Ripens in early to mid July in Sanger, Calif., 2 days later than Summer Fire. **Tree:** upright to upright spreading, vigorous, generally large, very productive. Flowers large, showy, pink, self-fertile. Leaf glands reniform, opposite. Brown rot tolerance low when compared to Summer Fire and July Red.

**Regal Pearl.**—White-fleshed, sub-acid, late-season, clingstone nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford and N.G. Bradford. Red Glen (USPP 7193) x unnamed white-fleshed seedling. Introduced in 2000 as USPP 12695. **Fruit:** globose, slightly compressed, uniform, symmetrical, medium in size; dark red mottled over moderate red with considerable pale, orange-yellow. Flesh firm, crisp, yellowish-white. Flavor very good, sub-acid and sweet. Ripens in mid to late August in LeGrand, Calif., 2 weeks after Fire Pearl (USPP 9358). **Tree:** upright, vigorous, large, productive. Flowers large (44.5 mm), showy, pale pink, self-fertile. Leaf glands reniform, opposite.

**Ruby Bright.**—Yellow-fleshed, acidic, clingstone, nectarine. **Origin:** LeGrand, Calif., by L.G. Bradford. Red Glen (USPP 7193) x Spring Bright (USPP 7507). Introduced in 2001 as USPP 12952. **Fruit:** globose, uniform and large, 100% of surface colored with a dark red blush. Flesh firm, crisp, clingstone, yellow with some red flecking around the pit cavity, acidic, sweet, excellent flavor. Ripens in about the second week of July in LeGrand, Calif., 22 days after Red Glen. **Tree:** upright, medium sized, vigorous. Flowers large (47.6 mm), showy, pale purplish pink, perfect, self-fertile. Leaf glands reniform, alternately positioned.

**Sunbest.**—Yellow, melting fleshed low-chill nectarine. **Origin:** Gainesville, Fla., by W. Sherman, Univ. of Florida. Sel. in 1994, tested as Fla. 94-15N and introd. in 2000. Sunraycer x Suncoast. USPPAF; assigned to Florida Foundation Seed Prod., Inc. **Fruit:** medium large (120–140 g), oval; skin is near 100% fire red over bright yellow ground; firm flesh with semi-freestone pit and no red at pit. Ripens mid-May, 3 days before Sunraycer nectarine at Gainesville. **Tree:** medium large with nodes closer than in most varieties, semi-upright, self-fertile, and highly productive. High flower bud set. Leaf glands reniform. Flowers non-showy; pink. Leaves are resistant to bacterial spot. Chilling requirement is 225 chill units.

**UFQueen.**—Yellow, non-melting flesh low-chill nectarine. **Origin:** Gainesville, Fla., by W. Sherman, Univ. of Florida. Sel. in 1994, tested as Fla. 94-28CN and introd. in 1999. Complex parentage in publication. USPP 11587; assigned to Florida Foundation Seed Prod., Inc. **Fruit:** medium (110–125 g), oval; skin is 80% to 100% red over bright yellow ground; very firm flesh with clingstone pit. Ripens 1 week after Sunraycer nectarine at Gainesville. **Tree:** medium large, semi-upright, self-fertile, and productive. Leaf glands are small and reniform. Flowers are non-showy and pink. Chilling requirement is 250 chill units. (Fruit Var. J. 53:126-127).

**Westbrook.**—Yellow, melting flesh. **Origin:** Fayetteville, Ark. by J.N. Moore, R.C. Rom and J.R. Clark, Univ. Arkansas; Ark. 172 x Ark. 176; sel. in 1980, tested as Ark. 236; introd. in 2000 by J.R. Clark, J.N. Moore and R.C. Rom. USPPAF. **Fruit:** medium size (100–110 g); round; skin is 80% red over a yellow ground; skin is thin and has observed to break down at full maturity in rainy conditions; melting flesh that is medium-firm, yellow color with some red; clingstone pit; very good flavor for very early ripening. Ripens 9 June at Clarksville, Ark., ≈20 days before Redhaven peach. **Tree:** vigorous, semi-spreading, self-fertile, and very productive. High flower bud set. Leaves have small reniform glands. Flowers are non-showy and pink; blooms 5–6 days later than comparison cultivars. Leaves and fruit are resistant to bacterial spot. Chilling requirement is 750 chill units. (HortScience 36:1164–1167).

## PEACH

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**Coral Princess.**—White-fleshed, clingstone, sub-acid peach. **Origin:** LeGrand, Calif., by L.G. Bradford and N.G. Bradford. Diamond Ray (USPP 8948) x unnamed white-fleshed seedling. Introduced in 2000 as USPP 12199. **Fruit:** globose, uniform and large; dark



red over a light yellowish pink color. Flesh firm, crisp, clingstone, yellowish-white. Flavor sub-acid and sweet, very good. Ripens during the first week of July in LeGrand, Calif., or with Diamond Ray. **Tree:** spreading, large, vigorous and productive. Flowers large (44.5 mm), showy, pale pink and self fertile. Leaf glands reniform, opposite,

**Earlitreat.**—Yellow-fleshed, low chilling, clingstone peach. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger. Selected seedling 12ED34 x Sweet Gem (USPP 4064). Introduced in 1997 as USPP 9842. **Fruit:** globose, medium, Light yellow to yellow ground color with red blush to lake red. Flesh firm, yellow to butter yellow, clingstone. Flavor good, mild, Ripens in early May in Modesto, Calif., 14 days before May Crest. **Tree:** upright, vigorous, large, productive. Flowers large, showy, pink, self-fertile. Leaf glands reniform. Chilling requirement of  $\approx 300$  h.

**Golden Princess.**—Yellow-fleshed, clingstone, sub-acidic peach. **Origin:** LeGrand, Calif., by L.G. Bradford. Crown Princess (USPP 7070) x unnamed white-fleshed seedling. Introduced in 2001 as USPP 12974. **Fruit:** globose, uniform and large, dark red blush over orange reddish color. Flesh firm, crisp, clingstone, orange-yellow with some dark red. Flavor sub-acidic, sweet, very good. Ripens during the first week of August in LeGrand, Calif., 60 days after Crown Princess. **Tree:** upright, medium sized, vigorous. Flowers large (44.5 mm), showy, light purplish pink, self-fertile. Leaf glands reniform, alternate.

**GoldJim.**—Yellow, non-melting flesh for processing. **Origin:** Fayetteville, Ark. by R.C. Rom, and J.N. Moore, Univ. Arkansas; Ark. 24 x NJC 70; sel. in 1977; tested as Ark. 219; introd. in 2000 by J.R. Clark, R.C. Rom, and J.N. Moore. Not patented. **Fruit:** medium size (130–150 g); round; skin is 45% red over a golden-yellow ground with some stripes; very firm flesh of orange-yellow color with red in flesh common in Arkansas but not in Michigan; clingstone pit; very good processing quality. Ripens 17 days after Allgold, with Goldlocks and 2 days before Babygold 5 at Clarksville, Ark. **Tree:** vigorous, semi-spreading, self-fertile, and very productive. High flower bud set. Leaves have small globose glands. Flowers are non-showy and pink. Leaves and fruit are resistant to bacterial spot. Chilling requirement is  $\approx 750$  chill units. (HortScience 36:1168-1170).

**Goldnine.**—Yellow, non-melting fleshed peach for processing. **Origin:** Fayetteville, Ark. by J.N. Moore and R.C. Rom, Univ. Arkansas; NJ 554367 x G17-5E; sel. in 1966; tested as Ark. 9 (and sold commercially with this designation prior to 2000); introd. in 2000 by J.R. Clark, J.N. Moore, and R.C. Rom. Not patented. **Fruit:** large size (180–110 g); round; skin is 40% red over a golden-yellow ground with stripes; very firm flesh of orange-yellow color with no red; clingstone pit; very good processing quality. Ripens 10 days after Allgold, 7 days before Goldlocks, and 10 days before Babygold 5 at Clarksville, Ark. **Tree:** vigorous, semi-spreading, self-fertile, and very productive. High flower bud set and very bud hardy with high bud survival at  $-26^{\circ}\text{C}$ . Leaves have small reniform glands. Flowers are showy and pink and blooms 2–3 days later than comparison cultivars. Leaves and fruit are resistant to bacterial spot. Chilling requirement is 750 chill units although Goldnine has been observed to fruit reliably in Chihuahua, Mexico with estimated chill of 500 chill units. (HortScience 36:808–810).

**Gulfprince.**—Yellow, non-melting fleshed peach for fresh market. **Origin:** Gainesville, Fla., by W. Sherman, Univ. of Florida; Aztecgold x Oro A; sel. in 1993, tested as Fla. 93-14C, and introd. in 1999 by W. Sherman, T. Beckman, and G. Krewer. USPPAF, assigned to Florida Foundation Seed Prod., Inc. **Fruit:** large size (140–160 g), symmetrical; skin is 50% red (with no stripes) over a deep yellow ground; very firm flesh with some red in the flesh, a clingstone pit, and no red at pit. Ripens 7 days after June Gold at Attapulugus, Ga. **Tree:** very vigorous, semi-spreading, self-fertile, and highly productive. High flower bud set. Leaves have small reniform glands. Flowers are showy and pink. Leaves are resistant to bacterial spot. Chilling requirement is 400 chill units. (J. Amer. Pom. Soc. 54:82–83).

**Island Prince.**—Yellow-fleshed, clingstone peach ripening in the very early season. **Origin:** Kingsburg, Calif., by A.R. Asdoorian and L.A. Asdoorian. Bud sport of Island King (USPP 9199). Introduced in 2001 as USPP 12102. **Fruit:** uniform, symmetrical, oval to globose, medium large sized, color peony to Burmese ruby with up to 50%

sunset ground color. Flesh firm, jonquil yellow, clingstone. Flavor very good to excellent, ripening in early to mid May in Kingsburg, Calif., 10–14 days before Island King. **Tree:** upright spreading, moderate vigor, medium, productive. Flowers medium to large, showy, light pink. Leaf glands reniform, alternate.

**Ivory Princess.**—White-fleshed, sub-acid, clingstone peach ripening in the early season. **Origin:** LeGrand, Calif., by L.G. Bradford and N.G. Bradford. Crown Princess (USPP 7070) x June Pearl (USPP 9360) Introd. in 2000 as USPP 12205. **Fruit:** globose, uniform, symmetrical, and medium; very red blending into a dark pink. Flesh firm, crisp, clingstone, yellowish-white. Flavor very good, sub-acid and sweet. Ripens in early June in LeGrand, Calif., with Crown Princess and seven days before June Pearl. **Tree:** upright, medium sized, vigorous, productive. Flowers large (50.8 mm), showy, pale purplish pink, self-fertile. Leaf glands reniform, alternate few opposite.

**Kingsburg Cling.**—Yellow-fleshed clingstone canning peach. **Origin:** Kingsburg, Calif., by M. Schnitzler. A bud sport of Dr. Davis. Introd. in 2001 as USPP 12739. **Fruit:** globular, uniform, large; red covers 50% of skin. Flesh firm, non-melting, clingstone, yellow-orange; ripens mid-July in Kingsburg, Calif., 2 weeks before Dr. Davis. Flavor good, mild. **Tree:** upright, medium to large, vigorous, productive. Flowers small, non-showy, red pink, self-fertile. Leaf glands reniform.

**LaBelle.**—Yellow, melting fleshed peach. **Origin:** Baton Rouge, La., by C.E. Johnson et al., Louisiana State Univ.; Dixieland x L63-17-13 (complex pedigree); tested as L73-A20-17 and introd. in 2001. **Fruit:** large size (175–200 g), freestone, skin is 70% over yellow ground. Ripens early July, 5 days before Dixiland at Clinton, La. **Tree:** vigorous and productive. Leaves have 2–4 small reniform leaf glands. Flowers are showy and self-fertile. Chilling requirement is 600 h.

**LaRouge.**—Yellow, melting fleshed peach. **Origin:** Baton Rouge, La., by C. E. Johnson, et al., Louisiana State Univ.; L9-10-40 op [=Redglobe x L221 (=Sunhigh op)]; tested as L1-27-13 and introd. in 2001. **Fruit:** large size (175–200 g), skin is 70% red over yellow ground; freestone with red near pit. Ripens first week in July, 5 days after LaFeliciana at Clinton, La. **Tree:** vigorous and productive. Leaves have 2–4 small reniform leaf glands. Flowers are showy and self-fertile. Chilling requirement is 600 h.

**LaSweet.**—White, sub-acid, melting fleshed peach. **Origin:** Baton Rouge, La., by C.E. Johnson et al., Louisiana State Univ.; Wildrose x L3-109-90 [=L221 op (=Sunhigh op)]; tested as L9-54-13W and introd. in 2001. **Fruit:** large size (150–175 g) oval; with 70% red; firm freestone with red near pit. Ripens early June, 17 days before LaFeliciana at Clinton, La. **Tree:** vigorous and productive. Leaves have 4–6 large reniform leaf glands. Flowers showy, pink, and self-fertile. Chilling requirement is 600 h.

**Moon Light.**—Early season, white-fleshed, clingstone peach. **Origin:** Seomyun, Yunkikun, Chungman, Republic of Korea, by J.K. Lim and S.J. Im. An open-pollinated seedling of the variety Yumyeong. Introduced in 2001 as USPP 12043. **Fruit:** globose with slight tip at the apex, extra large (8–11.5 cm), red skin. Flesh very firm, white, clingstone. Flavor excellent, mild, acidic sweet. Ripens in mid-August at point of origin 20 days before Yumyeong or 90–100 days after bloom. **Tree:** Spreading, large, vigorous and productive. Flowers medium size, non-showy, starts with white and changes to red, self-fertile. Leaf glands reniform.

**Roygold.**—Yellow, non-melting peach for processing. **Origin:** Fayetteville, Ark., by J.N. Moore and J.R. Clark, Univ. Arkansas. GoldJim x Ark. 310; sel. in 1993; tested as Ark. 560; introd. in 2000 by J.R. Clark and J.N. Moore. Not patented. **Fruit:** medium-large size (150–110 g); round; skin is 60% red over a golden-yellow ground; very firm flesh of orange-yellow color with no red; clingstone pit; expected to have very good processing quality. Ripens 9 days before Allgold, 24 days before Goldlocks and 27 days before Babygold 5 at Clarksville, Ark. **Tree:** vigorous, semi-spreading, self-fertile, and productive. High flower bud set. Flowers are showy and pink. Leaves and fruit are resistant to bacterial spot. Chilling requirement is 750 chill units. (HortScience 36:1334–1335).

**Snow Gem.**—White-fleshed, sub-acid, freestone peach. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G.

Zaiger. Selected seedling 102ED609 x selected seedling 105ED275. Introd. in 2000 as USPP 12435. **Fruit:** nearly globose slightly flattened at base, large almost 3 inches in diameter; yellowish-white to cream, partially overspread with red to Turkish red. Flesh firm, white to pinkish white, freestone. Flavor excellent, moderate, mild, sweet. Ripens in late August in Modesto, Calif., 18 days after O'Henry. **Tree:** upright, large, vigorous, productive. Flowers large, showy, pink to light pink, self-fertile. Leaf glands reniform.

**Snowfall.**—White-fleshed, sub-acid, freestone peach. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger. Selected seedling 103ED581 x selected seedling 258LC157. Introd. in 2000 as USPP 12568. **Fruit:** globose, very large (3–3 1/8 inch), white to pinkish white, light to light red blush. Flesh firm, white to very light amount of pinkish white; Bordeaux red around pit with light amount of bleeding; freestone; ripening in early September, 7–10 days after September Snow. **Tree:** upright, large, vigorous, productive. Flowers large, showy, pink to light pink, self-fertile. Leaf glands reniform. Chilling requirement ≈800–1000 h.

**Sprinter.**—White-fleshed, very firm, clingstone peach. **Origin:** Seomyun, Yunkikun, Chungman, Republic of Korea, by J.K. Lim and S.J. Im. An open-pollinated seedling of the variety Weolme. Introd. in 2001 as USPP 12021. **Fruit:** globose with slight tip at apex; extra large (8–12 cm); pink overspread with light yellow. Flesh very firm, white to milky white, clingstone. Flavor excellent, mild and very sweet. Ripens in late July at point of origin, ≈30 days before Yumyeong, or 80–90 days after full bloom. **Tree:** spreading, large, vigorous and productive. Flowers, medium, non-showy, pale pink and self-fertile. Leaf glands reniform.

**Star Light.**—White-fleshed, very firm, freestone peach. **Origin:** Seomyun, Yunkikun, Chungman, Republic of Korea, by J.K. Lim and S.J. Im. An open-pollinated seedling of the variety Daigubo. Introd. in 2001 as USPP 12024. **Fruit:** globose with slight tip on apex, extra large (8–12 cm); pink overspread with a light yellow. Flesh very firm, white to milky white, freestone. Flavor excellent, mild, and moderately aromatic. Ripens in late August at origin location ≈15–20 days after Daigubo. **Tree:** spreading, large, vigorous, and productive. Flowers medium, non-showy, pink and self-fertile. Leaf glands reniform.

**Sugar Time.**—Yellow-fleshed, sub-acid, clingstone peach ripening in the early season. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger. Selected seedling 45GA424 x selected seedling 7.5HB605. Introd. in 2001 as USPP 12046. **Fruit:** nearly globose, flattened at apex and base, medium large, mellow yellow ground color overspread with deep red to Bordeaux red over most of the surface. Flesh firm, butter yellow to sunflower yellow, clingstone. Flavor excellent, moderate, mild, sweet, sub-acid. Ripens in late June to early July in Modesto, Calif., 16 days after Sweet Gem. **Tree:** upright, large, vigorous, productive. Flowers large, showy, pink to light pink. Leaf glands reniform. No special disease characteristics noted. Chilling requirement ≈800 h.

**Sunlit Snow.**—White-fleshed, sub-acid, clingstone peach ripening in the very early season. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger. Selected seedling 36EB86 x selected seedling 5GE8. Introd. in 2000 as USPP 11553. **Fruit:** globose, medium to large, white to yellowish ground color nearly overspread with red to madder red. Flesh firm, white to pale greenish white near pit cavity, clingstone. Flavor very good, mild, sweet. Ripens in mid- to late May in Modesto, Calif., 18 days before Sugar May. **Tree:** upright, large, vigorous, productive. Flowers large, showy, link to light pink, self-fertile. Leaf glands reniform.

**Supechix.**—Yellow-orange-fleshed, clingstone peach ripening in the very early season. **Origin:** Bakersfield, Calif., by C.D. Fear, B.D. Mowrey, and D.W. Cain. Assigned to Sun World International, Inc. Bakersfield, Calif. Flordaprince x Queencrest (USPP 6025). Introduced in 2000 as USPP 12631. **Fruit:** globose, uniform, small, yellow ground color covered with 70% to 100% red color. Flesh firm, yellow orange around the pit cavity to yellow, clingstone. Flavor fair to good, melting, aromatic and delicate. Ripens in late April to early May in Kern County, Calif. **Tree:** semi-upright, medium large, productive for an early season peach. Flowers large, showy, red purple. Leaf glands medium and ovoid.

**Sweet Alice.**—Yellow-fleshed, sub-acid, clingstone peach ripening in the early season. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger. Open-pollinated seedling of two selections 3H192 x 104LB628. Introduced in 2001 as USPP 12083. **Fruit:** nearly globose, medium sized, sunflower yellow to golden yellow ground color, partially overspread with light red to madder red. Flesh firm, butter yellow to maize yellow, clingstone. Flavor very good, sub-acid, sweet. Ripens in late May in Modesto, Calif., 20 days before Sweet Gem. **Tree:** upright, large, vigorous, productive. Flowers large, showy, pink to light pink, self-fertile. Leaf glands reniform. Chilling requirement of ≈700–900 h.

**Sweet Blaze.**—Yellow-fleshed, sub-acid, semi-freestone peach. **Origin:** Modesto, Calif., by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger. Selected seedling 39EB706 x selected seedling 34GA1155. Introd. in 2000 as USPP 12630. **Fruit:** globose, large; yellow to vivid yellow ground color overspread with red to garnet red. Flesh firm, yellow to dark yellow with slight amount of red around pit cavity bleeding into flesh; semi-freestone. Flavor good, mild, sweet sub-acid. Ripens in mid June to late June in Modesto, Calif., 18 days after Sweet Scarlet. **Tree:** upright, large, vigorous, productive. Flowers large, showy, pink to light pink, self-fertile. Leaf glands reniform. Chilling requirement of ≈900 h.

**UFDelight.**—see **UF2000** (Used in Australia).

**UF2000 (UFDelight).**—Yellow, low-chill, non-melting fleshed peach. **Origin:** Gainesville, Fla., by W. Sherman, Univ. of Florida; Aztecgold x Oro A; sel. in 1992, tested as Fla. 92-15C, and introd. in 1999; USPP 12019; assigned to Florida Foundation Seed Prod., Inc. **Fruit:** medium large (130–150 g), round; skin is 50% red over yellow ground; very firm flesh with clingstone pit and no red at pit. Ripens in late May, or about the same time as Flordagold at Gainesville. **Tree:** vigorous, spreading, highly productive. High flower bud set. Leaves resistant to rust and bacterial spot. Leaf glands are small, reniform. Flowers are showy and pink. Chilling requirement is 300 chill units. (J. Amer. Pom. Soc. 54:48).

**UFO.**—Yellow, non-melting flesh, peento peach. **Origin:** Gainesville, Fla., by W. Sherman, Univ. of Florida. Fla. 95-10PC (=complex parentage) op; sel. in 1997, tested as Fla. 98-7PC, and introd. in 2001; USPPAF; assigned to Florida Foundation Seed Prod., Inc. **Fruit:** medium size (60–80 g), flat oval; skin is 50% attractive red with darker red stripes over deep yellow ground; very firm flesh with clingstone pit and no red at pit. Ripens 5–7 days after Flordaglo peach at Gainesville. **Tree:** very vigorous, semi-upright, self-fertile, and productive. There are 4–6 large reniform leaf glands. Flowers are non-showy and pink. Leaves are resistant to bacterial spot. Chilling requirement is 250 chill units. (J. Amer. Pom. Soc. 55:2–3).

## PEAR—EUROPEAN

Joseph D. Postman

USDA/ARS National Clonal Germplasm Repository  
Corvallis, Ore.

**Blake's Pride.**—A fire blight resistant, midseason *Pyrus communis* cultivar. **Origin:** released in 1998 by R.L. Bell and T. van der Zwet, USDA Agricultural Research Service, Kearneysville, W.Va., and R.C. Blake, USDA/ARS, Ohio Agricultural Research and Development Center (OARDC), Wooster, Ohio. A cross of US 446 x US 505 made in 1965 by H.J. Brooks. Selected in 1977 at OARDC, Wooster, Ohio, by R.C. Blake and T. van der Zwet and evaluated as OHUS 66131-021. Only *Pyrus communis* background with fire blight resistance from Seckel. **Fruit:** moderate size, symmetrical, pyriform to round-pyriform, 66 mm diameter, 80 mm height with short upright stem; skin yellow, glossy, ≈25% covered with smooth, tan russet; matures 3 weeks after Bartlett, ≈11 Sept. in Kearneysville; stores 3 months in common storage; flesh moderately fine buttery texture, juicy, with small grit cells at core and beneath skin; flavor subacid, and aromatic, more like Comice than Bartlett. **Tree:** upright-spreading, moderate vigor on Bartlett seedling rootstock. Moderate to high yield, precocious. Fruit borne on both spurs and terminal blossoms of lateral shoots. Fire blight resistance greater than Seckel; blossoms exhibit moderate resistance following artificial inoculations. Moderate field

resistance to pear scab; susceptible to powdery mildew and *Fabraea* leaf spot. Blooms 1–4 days before Bartlett; self-incompatible, but Bartlett, Beurre Bosc, Harrow Delight, and Packham's Triumph are suitable pollinizers. Named in memory of Roland C. Blake.

### Perry Pears

A number of English perry pear cultivars were imported to the United States from the Long Ashton Research Station, Bristol, England, by Porter Lombard at Oregon State Univ. in the early 1980s. Perry cultivars are generally high in tannins and are too astringent for fresh eating. They are primarily useful for producing the fermented beverage 'perry.' Of more than 100 English perry cultivars, a dozen or so were selected by Lombard for their superior milling and production qualities as reported by Long Ashton. Perry cultivars are derived from the snow pear, *Pyrus nivalis* Jacq. and from the wild relatives of *Pyrus communis* L. native to central Europe, and were almost certainly introduced to England from France following the Norman conquest in 11th century. During the last several years there has been increased interest in alternative fermented drinks such as hard-cider and perry in North America, and small perry pear orchards are now coming into trial production at several places on this continent. Virus-tested germplasm of the following cultivars is available in the United States.

**Barland.**—An early-midseason perry pear with high acids and tannins. **Origin:** traditional English cultivar, grown since before 1674. The original tree grew in the parish of Bosbury, Hereford, England, and was estimated to be 200 years old in 1830. **Fruit:** small, turbinate or round, 31–52 mm long, 38–51 mm diameter; stem slender, 25–32 mm, often fleshy where attached to fruit; no stem basin or calyx basin; calyx open. Skin dull green or yellow with gray russet at stem and calyx ends, lenticels numerous but inconspicuous. Flesh has some stone cells around core. Ripens late, September to early October in England's West Midlands, late September in western Oregon. **Tree:** long lived, becoming large and tall; possibly a triploid; precocious bearing; the flowers are said to have a more pleasant fragrance than most pears; fruit scab may be severe. **Perry:** fruit milled up to 3 days after harvest; juice acidity 0.92, tannins 0.26, specific gravity 1.058 for fruit from old trees, lower from young trees; produces a high acid, moderate tannin, fruity vintage of moderate quality. Barland perry has been reputed since the 17th century to have medicinal value in treating kidney disorders.

**Barnet.**—An early-midseason scab-resistant perry pear with low acids and tannins. **Origin:** grown south of Gloucester, England in the 1800s; propagated and distributed by Long Ashton Research Station, Bristol, England in the early 1900s. **Fruit:** small, turbinate to elliptical, 43–57 mm long, 38–51 mm diameter; stem stiff, 28–35 mm; no stem basin, shallow calyx basin. Skin green to yellow-green flushed with orange-red and covered with russet; lenticels inconspicuous. Flesh has few stone cells around core, often only four carpels. Ripens early October in England's West Midlands, late September in western Oregon; easily shaken from tree. **Tree:** mature tree is medium to large, with compact growth, acute branch angles, distinct spurs, tends toward biennial bearing; precocious bearing; late flowering; fruit scab rare. **Perry:** fruit milled 1–3 weeks after harvest; juice acidity 0.28, tannins 0.09, specific gravity 1.052; produces a pleasant low acid, low tannin vintage of average quality.

**Blakeney Red.**—A midseason perry pear with moderate acids and tannins. **Origin:** traditional English cultivar, widely planted in the early 1800s in the Awre district west of Gloucester. Possibly a seedling of the ancient cultivar Thorn or Red Longdon. During the 19<sup>th</sup> century this was considered a dual-purpose pear, used for both eating and for perry. **Fruit:** small-medium, pyriform to turbinate, 49–62 mm long, 49–59 mm diameter; stem slender, 26–35 mm; stem basin small and narrow, calyx basin well defined; calyx open or reflexed. Skin yellow with deep red blush on side exposed to sun, some russet spreading from calyx end; lenticels numerous, generally small. Flesh firm, crisp, juicy with stone cells around core. Ripens late September to mid-October in England's West Midlands, late September in western Oregon. **Tree:** a heavy and reliable cropper; vigorous and sturdy with upright branches when young, becoming a medium to large tree; slow to come into bearing. **Perry:** fruit milled up to 7 days after harvest; juice acidity 0.42, tannins 0.13, specific gravity 1.056; produces a pleasant vintage of average quality with medium acid and tannin. Fruit must be at

proper maturity to produce an acceptable perry. Has a reputation for making a second-rate perry as the fruit quickly becomes overripe.

**Brandy.**—A midseason perry pear with medium acids and low tannins. **Origin:** traditional English cultivar from West Gloucestershire popular during the 1800s. **Fruit:** small, turbinate, 46–58 mm long, 38–52 mm diameter; stem thick, 8–24 mm; no stem basin, slight calyx basin. Skin pale green or yellow-green with red blush, russeted at stem and calyx ends, with numerous lenticels. Flesh has stone cells concentrated toward calyx end and around core. Ripens in October in England's West Midlands, early September in western Oregon. **Tree:** mature tree is smaller and with wider crotch angles than most other perry cultivars; vigorous and sturdy as a young tree; heavy producer but tends toward biennial bearing; very precocious bearing; mid-late flowering; some fruit scab. **Perry:** fruit milled up to 4 weeks after harvest; juice acidity 0.44, tannins 0.12, specific gravity 1.069 from older trees, values lower from young trees; produces a dark-colored, aromatic, mild-flavored vintage of average quality.

**Butt.**—A late-season perry pear with moderate acids and moderate tannins. **Origin:** traditional cultivar from the Gloucestershire and Herefordshire regions of England, widely planted during the 1800s. **Fruit:** small, turbinate to slightly pyriform, 44–51 mm long, 42–51 mm diameter; stem slender to 30 mm; no stem basin, slight calyx basin; calyx open or reflexed. Skin lemon-yellow to greenish yellow, slightly russeted near stem and calyx; lenticels inconspicuous except on russet. Flesh tinged yellow, coarse-grained, granular with stone cells around core. Ripens early November in England's West Midlands, early October in western Oregon; excellent keeping quality prior to milling. **Tree:** mature tree is moderately large; long branches have conspicuous spurs; heavy producer but tends toward biennial bearing; slow to come into bearing; some fruit scab. **Perry:** fruit milled 4–10 weeks after harvest; juice acidity 0.54, tannins 0.32, specific gravity 1.056; slow to ferment; produces a fruity, slightly astringent vintage of good quality.

**Gin.**—A late-season scab-resistant perry pear with moderate acids and tannins. **Origin:** traditional English cultivar from the Newent district of Gloucestershire. **Fruit:** small, broadly turbinate, almost oblate, 35–49 mm long, 42–58 mm diameter; stem slender, 22–39 mm; no stem basin, calyx basin slight to none; calyx closed to slightly open. Skin green, flushed with orange, slightly russeted near stem and calyx; lenticels inconspicuous. Flesh has some stone cells around core. Ripens mid October in England's West Midlands, and in western Oregon; excellent keeping quality prior to milling. **Tree:** vigorous growth as a young tree, becoming medium size when mature. Good production but tends toward biennial bearing; some fruit scab. **Perry:** fruit milled 3–5 weeks after harvest; juice acidity 0.42, tannins 0.15, specific gravity 1.052; higher concentration of citric acid than other perry pears (>0.3%); produces a good quality vintage with medium acids and tannins.

**Hendre Huffcap.**—A midseason perry pear with medium acids and low tannins. **Origin:** traditional old English cultivar from the Bromsberrow and Haresfield districts of Gloucestershire. Related to, but distinct from the Yellow Huffcap. The name 'Huffcap' may have come from a potent ale that could "lift one's cap", or possibly from an alternate spelling 'Huffcup' referring to "lifting your cup" when making a toast. **Fruit:** small, elliptical, often irregular, 46–54 mm long, 43–50 mm diameter with a distinctly bulging calyx end; no stem basin or calyx basin; calyx upright. Skin green to yellow, with slight orange flush; slight russet at stem and calyx end; lenticels numerous, but small and inconspicuous. Flesh has concentration of stone cells near calyx end and some around core. Ripens early to mid-October in England's West Midlands, late September to early October in western Oregon; easily shaken from tree. **Tree:** mature tree is large with few upright limbs and wide crotch angles; early flowering; fruit scab is rare. **Perry:** fruit milled up to 2 weeks after harvest; juice acidity 0.37, tannins 0.08, specific gravity 1.059; reliably produces a light, good-quality vintage with low tannins.

**Red Pear.**—A midseason perry pear with low acids and tannins. **Origin:** a very old English cultivar, grown in the West Midlands, particularly Herefordshire, since before 1600. **Fruit:** small, globular to turbinate, 39–49 mm long, 42–51 mm diameter; stem short and stout, 14–19 mm, often swollen where attached to the fruit; small, narrow

stem basin; slight calyx basin. Skin greenish-yellow, almost completely covered with red; slight russet at stem and calyx ends; lenticels numerous, large. Flesh yellow, firm, dry, with a small number of prominent stone cells around core. Ripens mid October in England's West Midlands, mid September in western Oregon. **Tree:** mature tree is medium size, with few main leaders and wide crotch angles; very adaptable, growing well in diverse locations; very precocious, heavy producer but tends toward biennial bearing; late flowering; some fruit scab. **Perry:** fruit milled up to 3 weeks after harvest; juice acidity 0.29, tannins 0.09, specific gravity 1.055; produces a low acid, low tannin vintage of average quality.

**Taynton Squash.**—An early season perry pear with medium acids and tannins. **Origin:** a very old English cultivar grown in the West Midlands since before 1700. The cultivar name is presumably derived from Taynton, its parish of origin. In his 1811 'Pomona Herefordiensis' Thomas Andrew Knight wrote of this pear, already considered an old cultivar at that time, that during a favorable season and when well managed "it affords a much finer liquor than any other pear." **Fruit:** small, oblate or turbinate, 39–45 mm long, 46–52 mm; stem slender, 20–27 mm, often fleshy where attached to the fruit; almost no stem basin; calyx basin wide and shallow; calyx open or upright, rarely reflexed. Skin dull greenish yellow, with a brownish-red blush; slight russet at stem end and calyx end; lenticels numerous, small but conspicuous. Flesh white, briskly sweet, with stone cells around core. Ripens mid-late September in England's West Midlands, mid September in western Oregon; does not store well. **Tree:** mature tree is medium to large with narrow crotch angles, twiggy; very productive but usually biennial bearing; early flowering; fruit scab often severe. **Perry:** fruit milled within two days of harvest; juice acidity 0.45, tannins 0.13, specific gravity 1.058; higher concentration of citric acid than most other perry pears (>0.3%); produces an average quality vintage with medium acid and tannin; compared to champagne in older writings.

**Thorn.**—An early-midseason perry pear with medium acids and low tannins. **Origin:** a very old English cultivar grown since the 1600s. **Fruit:** small, pyriform, occasionally turbinate, 42–64 mm long, 40–54 mm diameter; stem short, 11–25 mm; no stem basin; wide, shallow calyx basin; calyx stiffly upright. Skin yellow, russeted at stem and calyx ends; lenticels numerous but inconspicuous. Flesh with few stone cells around core. Ripens mid-late September in England's West Midlands, early September in western Oregon. **Tree:** small, upright and compact with conspicuous spurs; very productive, but very slow to come into bearing; fruit scab often present. **Perry:** fruit milled within one week of harvest; juice acidity 0.57, tannins 0.10, specific gravity 1.062; produces a good quality vintage with low tannins.

**Winnal's Longdon.**—A midseason scab-resistant perry pear with high acids and low tannins. **Origin:** raised by Mr. Winnal of Woodfield, England, in the parish of Weston-under-Penyard ≈1790. **Fruit:** small, pyriform, 51–62 mm long, 38–50 mm diameter; stem 13–25 mm; no stem basin, slight calyx basin; calyx reflexed. Skin greenish-yellow, with considerable red blush; slight russet at stem end, more at calyx end; lenticels small, numerous and conspicuous. Flesh has small stone cells around core. Ripens in early October in England's West Midlands. **Tree:** mature tree is medium to large; very productive but tends toward biennial bearing; slow to come into bearing; one of the few English perry pears compatible with quince rootstock; relatively free of fruit scab. **Perry:** fruit milled within one week of harvest; juice acidity 0.57, tannins 0.11, specific gravity 1.058; produces a good quality vintage with moderate acids and low tannins.

**Yellow Huffcap.**—A midseason perry pear with high acids and low tannins. **Origin:** traditional old English cultivar. The 'Huffcaps' are a related group of cultivars with a distinct elliptical shape, protruding calyx end, and capacity for producing a strong perry. The Yellow Huffcap may be the original Huffcap pear from which the others were derived. The name 'Huffcap' may have come from a potent ale that could "lift one's cap", or possibly from an alternate spelling 'Huffcup' referring to "lifting your cup" when making a toast. **Fruit:** small, elliptical, 41–51 mm long, 35–45 mm diameter; stem thick and swollen at both ends, 14–22 mm; stem basin small or none; calyx basin narrow; calyx upright. Skin green or dark yellow with no blush,

russeted around stem and calyx; covered with large, corky lenticels. Flesh slightly yellow-green with few stone cells. Ripens mid-October in England's West Midlands, mid-September in western Oregon; must be shaken before ripe to prevent rotting on the tree. **Tree:** mature tree is large with large spreading limbs. Very productive, but biennial bearing, slow to come into bearing; early flowering. **Perry:** fruit milled within one week of harvest; juice acidity 0.62, tannins 0.10, specific gravity 1.064; contains a higher concentration of citric acid than most other perry pears (>0.3%); produces a consistently good to excellent full-flavored vintage with moderate acids and low tannins.

## PECAN

**L.J. Grauke and Tommy E. Thompson**  
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**Nacono.**—A productive, high-quality cultivar of *Carya illinoensis*. **Origin:** controlled cross (Cheyenne x Sioux) made in Brownwood, Tex., by E.J. Brown and G.D. Madden in 1974. Tested as 74-5-55 by T.E. Thompson and L.J. Grauke and cooperatively released by USDA-ARS and the Texas Agr. Expt. Sta., 18 July 2000. **Nut:** oblong with acute apex, and an acuminate (pointed) base; round in cross section; 44 nuts/lb, 56% kernel; kernels cream to golden in color, with shallow dorsal grooves and a rounded dorsal ridge. **Tree:** vigorous, beginning spring growth with Desirable and developing dense canopies of large leaves, on limbs with wide angles. Protogynous, with midseason pollen shed and early to midseason receptivity. Moderately resistant to scab, being more resistant than Desirable and less resistant than Stuart. Moderately susceptible to yellow and black aphids, being more susceptible than Pawnee, but less susceptible than Stuart. Medium precocity (comparable to Pawnee). Nuts average 3 per cluster, ripen 11–21 Oct. in College Station, Tex., ≈8 days before Desirable and 12 days before Stuart. Nacono bears well, outyielding Pawnee and Desirable through the tenth leaf in College Station. Nacono rarely overbears, having 56% terminals with clusters in a high production year, comparable to the 52% of the consistently producing Desirable.

**Tiny Tim.**—Heavy bearing, very small-fruited *Carya illinoensis* cultivar selected as waterfowl mast source and used as preferred seedstock and as grafted seedlings in wetland restoration. **Origin:** native pecan selected in 1994 by Kenneth Dalrymple, Missouri Dept. of Conservation, from upland site on edge of flood plain in Lincoln County, Mo., near confluence of Cuivre and Mississippi Rivers. First propagated in 1997 by Wayne Lovelace, Forrest Keeling Nursery, on behalf of Missouri Dept. of Conservation. Original tree died from effects of man-made pond built at base of tree. **Nut:** oblong elliptical with prominent acute apex and obtuse base; round in cross section; 342 nuts/lb, 42% kernel; kernels cream to golden, with wide, shallow dorsal grooves and deep, tight basal cleft; often shelling out as full halves. Shell ≈1 mm thick. Precocious, bearing nuts from grafts in ≈3 years. Leaflets are narrower and foliage on tree is held later in the autumn than typical local natives.

## PLUM

**David W. Ramming**  
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**315-80-67.**—A dark red European plum. **Origin:** Reedley, Calif., by Tom Chamberlin, Sr. Unknown origin. Seed planted 1980, first fruited 1983. USPP 10984 issued 29 Jun. 1999. Assigned to Agri Sun Nursery. **Fruit:** large, 60 mm diameter, round to slightly oval; skin dark red; flesh light yellow crisp and firm; free; ripe second week August in Central Calif. **Tree:** average vigor and size, not self-fertile but productive with adequate pollination.

**Gulfbeauty.**—A low-chill Japanese plum. **Origin:** Gainesville, Fla., by Wayne B. Sherman, Univ. of Florida. Fourth generation open-pollinated seedling of polycross of Ozark Premier, Burbank, Beauty, and Bruce hybridized with pollen of Taiwan. Taiwan = Huang-ju

open-pollinated. Selected in 1985; tested as Fla. 85-1; introduced in 1998. USPP 11224 issued 15 Feb. 2000. Assigned to Florida Foundation Seed Producers, Inc. **Fruit:** small, 47 mm diameter, 50–55 g, round; skin dark red; flesh pale yellow; cling; ripe early May in Florida one week before Gulfruby. **Tree:** vigorous, semi-spreading, cross fertile with Gulfruby, precocious and productive. Tolerant to bacterial sport, high resistance to leaf scald. Chilling requirement 250 h.

**Gulflaze.**—A low-chill Japanese plum. **Origin:** Gainesville, Fla., by Wayne B. Sherman, Univ. of Florida. Fourth generation open-pollinated seedling of polycross of Ozark Premier, Burbank, Beauty, and Bruce hybridized with pollen of Taiwan. Taiwan = Huang-ju open-pollinated. Selected in 1987; tested as Fla. 87-7; introduced in 1998. USPP 10880 issued 4 May, 1999. Assigned to Florida Foundation Seed Producers, Inc. **Fruit:** small, 50 mm diameter, 75–80 g, round to slightly elliptical; skin dark red; flesh deep orange; semi-freestone; ripe late May in Florida one week after Gulfruby. **Tree:** vigorous, semi-spreading, cross fertile with Gulfruby, precocious and productive. Tolerant to bacterial sport, high resistance to leaf scald. Chilling requirement 250 h.

**Gulfrose.**—Blood fleshed, low chill Japanese plum. **Origin:** Gainesville, Fla., by W. Sherman, Univ. of Florida. Gulfruby op; selected in 1995 and introduced in 2001. USPPAF. Assigned to Florida Foundation Seed Producers, Inc. **Fruit:** medium size, 70–80 g, round; skin is dark red; flesh is blood red; semi-freestone; ripens with Gulflaze at Gainesville. **Tree:** vigorous, semi-upright; Gulflaze recommended for cross-pollination; resistant to bacterial spot and leaf scald. Chilling requirement 275 h. (J. Amer. Pom. Soc. 55:62).

**John W.**—Late ripening, self-fertile Japanese plum. **Origin:** Fresno, Calif., by D. Ramming, USDA, ARS. K42-26 [=Laroda x B65-11 (=Queen Ann x Late Santa Rosa)] x K189-73 [=Friar x Simka] made in 1985. Selected in 1990, tested as K169-3, introduced May 2001. **Fruit:** medium to large, 62–72 mm, 129–163 g, round to slightly oval; skin purple red with some speckles; flesh orange, firm, fine texture; cling; ripe the last week of August to the first week of September with Angeleno. **Tree:** vigorous, semi-upright; self fertile, productive.

**Sir George.**—A large, midseason purple Japanese plum. **Origin:** Fresno, Calif. by Eric Wuhl. Supposed hybrid of Challenger and Showtime. USPP 11149 issued 7 Dec. 1999. **Fruit:** large, 60 mm diameter; skin, purple; flesh, yellow, firm, freestone; matures fourth week of July in California. **Tree:** medium, upright and slightly spreading, productive; partial self-fertile.

**Sutter.**—A European plum for drying. **Origin:** Davis, Calif., by Ted DeJong and James Doyle. Sugar x Primacotes made in 1987. Selected in 1993, tested as 4-6W-53, introduced in Dec. 2000, USPPAF. **Fruit:** large, 30–35 g, similar to French prune in shape; skin dark purple with medium waxy bloom; flesh dark yellow to yellow amber; nearly free; ripe early to mid-August, 7 to 10 days ahead of Improved French prune with 2 degrees more soluble solids at harvest. **Tree:** similar in form and vigor to Improved French; self-fertile, productive.

**Tulare Giant.**—A European plum for the fresh market. **Origin:** Davis, Calif., by Ted DeJong and James Doyle, Univ. of Calif. Empress x Primacotes made in 1987. Selected in 1991, tested as 3-6E-13, introd. in Dec. 2000, USPPAF. **Fruit:** very large, 50–60 g, oval; skin dark purple with a grayish colored and waxy bloom; semi-free; flesh light yellow; ripe early to mid-July, several weeks earlier than Improved French. **Tree:** vigorous; self-fertile, highly productive, needs to be thinned for fresh market.

**Yellow #503.**—An early-ripening small yellow Japanese plum. **Origin:** Reedley, Calif., by Tom Chamberlin, Sr. Unknown origin. Seed planted 1989, first fruited 1992. USPP 11061 issued 14 Sept. 1999. Assigned to Corrin Family Trust. **Fruit:** very small, 35 mm diameter; round; skin yellow-green; flesh crisp, firm, 20% soluble solids, yellow; cling; ripe third week June in Central Calif. **Tree:** vigorous, normal size; productive annually. Chilling requirement 250–400 h.

## PLUMCOT

David W. Ramming

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**Flavor Ann.**—An interspecific (apricot x plumcot) x plum with golden yellow pubescent skin. **Origin:** Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Hybrid of 87EB90 (=apricot 15W297 x plumcot [=Red Beaut op]) x Royal Zee plum. USPP 10899 issued 18 May 1999, assigned to Guillou Freres. **Fruit:** medium, 60 mm, 70 g, nearly globose; skin, golden yellow, pubescent; flesh yellow, firm, 16.0% SS; freestone; ripe third week of May in California. **Tree:** large, vigorous, semi-spreading; productive, self-fertile, pollinates Flavorella plumcot.

**Flavorfall.**—An interspecific plum x plumcot with red skin and late ripening. **Origin:** in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Hybrid of 65EC752 (=unknown late plum op) x 4G1180 plumcot (=Redbeaut op). USPP 11990 issued 17 Jul. 2001. **Fruit:** large, 60 mm diameter, 181 g, globose; skin garnet red over yellow ground color, glabrous; flesh yellow, firm, 17.4% SS; cling; matures 20 days after Flavorich, the second week of October in California. **Tree:** large, vigorous, upright, productive; anthers orange, self-unfruitful.

**Flavor Gem.**—An interspecific (plumcot x plum) x plum with red skin. **Origin:** in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Hybrid of 21GB794 (=plumcot of unknown parentage x King David plum) x Royal Zee plum. USPP 10915 issued 25 May 1999. **Fruit:** medium, 60 mm diameter, 114 g, globose; skin garnet red over yellow ground color, glabrous; flesh yellow, firm, 20.5% SS; freestone; matures 1 week later than Flavor King, ripe third week of August in California. **Tree:** medium, vigorous, semi-spreading; productive.

**Flavor Gold.**—A complex interspecific plumcot with yellow skin. **Origin:** in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Open-pollinated seedling of 336LC131 (=36ED128 (=Friar plum x Autumn Giant plum) x 7HC160 (=Friar op x 4G1180 plumcot [=Red Beaut op]) x 4G1180)). USPP 12074 issued 28 Aug. 2001. **Fruit:** large, 65 mm, 105 g, globose; skin, yellow, glabrous; flesh, yellow, firm, 22.1% SS; cling; ripe 1 week later than Flavor Queen, the first week of August in California. **Tree:** large, vigorous, upright; productive, anthers yellow, self-unfruitful.

**Flavor Heart.**—An interspecific plum x plumcot with dark red skin. **Origin:** Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Hybrid of 24EB412 plum (=Red Beaut op) x 4G1180 plumcot (=Red Beaut op). USPP 10608 issued 22 Sept. 1998. **Fruit:** large, 67 mm, heart shape; skin dark ruby, glabrous; flesh yellow, firm; clingstone; ripe first week August in California. **Tree:** large, vigorous, semi-spreading; productive.

**Flavorite.**—An interspecific midseason plumcot with red skin. **Origin:** Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Hybrid of 16GG159 (=25GB924 (=unknown plum) x 4G1180 plumcot [=Red Beaut op]) x 26GF10 (=21GB794 [=unknown plumcot x King David] x Royal Zee). USPP 11609 issued 31 Oct. 2000. **Fruit:** medium, 55 mm diameter, 112 g, globose; skin garnet red over yellow ground color, glabrous; flesh yellow to light orange, firm, 20% SS; freestone; matures 30 days before Flavor King, second week of July in California. **Tree:** large, vigorous, semi-spreading; productive, pollen present.

**Honey Rich.**—A complex interspecific plumcot with apricot appearance. **Origin:** Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Hybrid of 7HC43 {=87EB90 [=Flaming Gold apricot op x plumcot (=Red Beaut op)] x Royal Zee plum} x Tom Cot apricot. USPP 10292 issued 24 Mar. 1998. **Fruit:** medium, 60 mm diameter, elongated, slightly compressed, apricot appearance with pubescence; skin orange; flesh orange, firm, 15% SS; freestone; ripe

third week of May in California. **Tree:** large, vigorous, semi-spreading; productive.

**Miwang.**—An interspecific plum x apricot. **Origin:** near JungPyong, KeoSan, ChungBuk, Korea, by Yun-Won Lee. Hybrid of an open-pollinated apricot (*Prunus armeniaca*) x native plum (*P. domestica*). (More likely *P. salicina*, ed. note). USPP 11258 issued 29 Feb. 2000. **Fruit:** medium, 90 g, globose with slight tip; skin dark red with yellow spots, slight pubescence; flesh dark red, firm but delicate, 18% SS; semi-cling; ripe late July. **Tree:** medium, semi-spreading; productive.

**Spring Satin.**—An early ripening plumcot for the Southeast. **Origin:** Byron, Ga., by W.R. Okie of USDA-ARS. BY8111-6 op (=BY4-601 (=Queen Ann x Santa Rosa) x Frontier); seed planted in 1988; sel. in 1991 as BY88Z1092. Apricot pollen parent unknown. **Fruit:** size 5 cm; round to oblate in shape; skin reddish-black with very short fuzz; flesh firm, yellow-red; quality good when flesh softens, otherwise tart; clingstone; ripens 2-3 weeks before Santa Rosa and Morris or late May at Byron. **Tree:** moderately vigorous with upright growth; compatible with peach rootstock; moderately resistant to bacterial spot and canker; tolerant of plum leaf scald. Flowers white, 2 cm diameter; moderate pollen but relatively self-infertile; sets well with Japanese plum pollen, less well with apricot pollen; chill requirement 750 h. Productive if cross-pollinated and usually requires thinning.

## PRUNUS ROOTSTOCK

T.G. Beckman

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Byron, Ga.

**Avifel.**—See Torinel™.

**Marianna M40.**—A clonal *Prunus cerasifera* x *P. munsoniana* rootstock for plums. **Origin:** developed by J.F. Doyle, F.E. Fenton, and C.O. Hesse. M40 is an open-pollinated seedling collected from Marianna type plums from an unknown source. USPP 11403 issued 6 June 2000, assigned to Regents of the Univ. of Calif., Oakland. **Tree:** M40 is propagated by hardwood cuttings. Prune varieties budded on M40 display superior anchorage and produce fewer rootstock suckers than do those budded on Marianna 2624. (HortTechnology 9:498-505).

**Nickels.**—A clonal, interspecific hybrid (*Prunus amygdalus* x *persica*) rootstock for almond, plum and peach. **Origin:** developed by D.E. Kester and R.N. Asay. Originated in 1973 from a cross of Sel. 5-33 (McLish x Reams) x Nemaguard. Tested as UCD 1-82. USPP 12188 issued 6 November, 2001, assigned to the Regents of the Univ. of California, Oakland. **Tree:** unbudded trees are vigorous, spreading with long shoots and display a higher chilling requirement than Hansen 536 or Hansen 2168. Can be readily propagated by hardwood cuttings. Has root-knot nematode resistance comparable to Nemaguard and appears to have resistance to Phytophthora root rot and iron chlorosis. Almond varieties budded on Nickels exhibit superior transplanting success, anchorage and longevity than those on Hansen 536 or Hansen 2168.

**Penta.**—A clonal *Prunus domestica* rootstock for peach, as well as apricot and plum. **Origin:** A. Nicotra and L. Moser at the Istituto Sperimentale per la Frutticoltura, Rome, Italy. Open-pollinated seedling of Imperial Epineuse. Introduced in 1995. **Tree:** easily propagated by hardwood cuttings or tissue culture. Trees budded to Tetra are well anchored, more vigorous and higher yielding than trees budded on peach seedling. Tetra is non-suckering and better adapted to heavy soils than peach seedling. Good compatibility with almond and plum cvs. tested. (Acta Hort. 451:269-271).

**Pumiselect™ (Rhenus 2).**—A clonal *Prunus pumila* rootstock for peach as well as apricot. **Origin:** H.B. Jacob at the Geisenheim Research Station, Geisenheim, Germany. Tested as Clone 73/95; an open-pollinated seedling of *P. pumila*. USPP 11233 issued 22 Feb. 2000, assigned to Tree Connection, Inc., Dundee, Oregon. **Tree:** propagated readily by hardwood or softwood cuttings, stool bed or tissue culture. Peach trees are dwarf to semi-dwarf (≈65% of those budded on Nemaguard), display good anchorage, early bearing, supe-

rior yield efficiency (≈50% higher than those budded on Nemaguard) and cold hardiness. Apricots are dwarfed ≈50% compared to seedling apricot rootstock.

**Rhenus 2.**—See Pumiselect™.

**Sirio.**—A clonal, low vigor, interspecific hybrid (*Prunus persica* x *amygdalus*) rootstock for peach. **Origin:** F. Loreti and R. Massai, Dipartimento di Coltivazione e Difesa delle Specie Legnose, Univ. of Pisa, Italy. An open-pollinated seedling of GF557. Tested as I.S.5/22. **Tree:** unbudded trees display weak vigor, semi-erect growth habit, with reniform leaf glands and light pink showy flowers. Difficult to propagate by stool bed or trench layering and roots poorly by hardwood cuttings. Performs well in micropropagation. Trees budded to Sirio display low vigor (≈40% of GF677), high productivity per unit canopy volume (≈120% of GF677), superior fruit size, red blush, ripening uniformity and early production than trees budded on GF677 or seedling peach. Sirio is well anchored and adapted to calcareous soil (comparable to GF677). Not well adapted to low fertility soils or to heavy, poorly drained soils. (Acta Hort 465:229-236).

**Tetra.**—A clonal *Prunus domestica* rootstock for peach as well as plum and apricot. **Origin:** A. Nicotra and L. Moser, Istituto Sperimentale per la Frutticoltura, Rome, Italy. Open-pollinated seedling of Regina Claudia Verde. Introduced in 1995. **Tree:** easily propagated by hardwood cuttings or tissue culture. Peach trees budded to Tetra are well anchored, and display vigor and yield efficiency similar to trees budded on peach seedling. Non-suckering and better adapted to heavy soils than peach seedling. Good compatibility with plum and almond cvs. tested. (Acta Hort. 451:269-271).

**Torinel™ (Avifel).**—A clonal *Prunus domestica* rootstock for apricot and plum. **Origin:** J.M. Audergon, INRA Station de Recherches Fruitières Méditerranéennes, Montfavet, France. Hybrid of Reine Claude P994 x Reine Claude de Bavay; tested as P3116. USPPAF. **Tree:** can be propagated by hardwood cuttings and tissue culture. Displays better graft compatibility with apricot, particularly with exacting cultivars, than other plum rootstocks tested. Trees on Torinel display lower vigor (at least 20% less than commercial plum type rootstocks), similar bloom, fruit maturation date, fruit size and quality when compared to other commercial plum types for apricot. Trees on Torinel are more precocious and yield efficient than those on commercial standards. Also compatible with plum cvs. tested. Has demonstrated waterlogging tolerance comparable to GF8-1. Appears to possess some resistance to lesion nematode (*Pratylenchus vulnus*) and is resistant to several species of root-knot nematode (*Meloidogyne* sp.). (Acta Hort. 293:395-400).

## RASPBERRY

Hugh Daubeny

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**Borgund.**—A floricanic fruiting raspberry suited to fresh market. **Origin:** The Norwegian Crop Research Institute, Njos, Leikanger, Norway, by J. Oydvin; a self-pollinated selection from Distad; sel. 1979 by R. Nestby; tested as N71-B9. **Fruit:** medium to large; light red; soft; good flavor; early ripening. **Plant:** moderate to high yields; primocanes slender, relatively sparse. Resistant to cane diseases.

**Christmas Tree.**—See Claudia.

**Citria.**—A high-yielding, early ripening, yellow-fruited floricanic raspberry. **Origin:** Fruit Research Institute Pitesti-Maracineni, Ages, Romania, by P. Mladin; from a 1983 cross of Cayuga x Orrs Seedling (a Russian cultivar of unknown origin); sel. 1987; tested as 83-1-44; introd. 1996. **Fruit:** medium size; yellow turns to orange when overripe; medium firm; easy to harvest; sweet flavor; high Vitamin C level; early ripening. **Plant:** mainly floricanic fruit but has some late primocane fruit; vigorous with relatively upright, spineless canes; short to medium laterals with six to 10 flowers each; good primocane production; winter hardy. Resistant to spur blight (*Didymella appianata*) and powdery mildew (*Spaerotheca macularis*) and tolerance to anthracnose (*Elsinoe veneta*) and leaf spot (*Sphaerulina rubi*); field resistant to root rot (*Phytophthora fragariae* var. *rubi*). Resistant to

common strain of raspberry bushy dwarf virus.

**Claudia (Christmas Tree).**—A winter-hardy floricanes fruiting raspberry. **Origin:** Univ. of Maryland by H.J. Swartz; Skeena x (Titan x AmosH); sel. 1993 at the Wye Institute in Queenstown, Md.; tested as KCE-1 as part of the Universities of Maryland, Rutgers, and Wisconsin River Falls and Virginia Polytechnic Institute Bramble Breeding Program; USPPAF. **Fruit:** large; moderately firm; slight tendency to uneven color; mild flavor; mid- to late-season ripening. **Plant:** slow to establish; canes stiff and terminate growth early in fall; laterals upright with well presented fruit; very late primocane production; winter hardy.

**Cowichan.**—A high quality, floricanes fruiting raspberry suited to machine harvesting. **Origin:** Pacific Agriculture Research Centre, Agassiz, B.C. Canada, by H.A. Daubeny and C. Kempler. Newburgh x Qualicum; cross made in 1987; sel. 1990; tested as BC 87-14-20; introd. 2001. **Fruit:** large; bright, glossy medium red; excellent quality with good flavor; most similar to Tulameen but firmer; easy to harvest. **Plant:** moderately productive; vigorous, upright, sturdy floricanes with medium length, upright, stiff laterals with well spaced fruit; abundant red to purple primocanes; short spines on lower part of cane are not objectionable. Susceptible to cane Botrytis (*Botrytis cinerea*) and to spur blight; may have some resistance to root rot; to date has not become naturally infected with raspberry bushy dwarf virus; resistant to common strain of North American aphid vector (*Amphorophora agathonica*) of the raspberry mosaic virus complex.

**Emily.**—A firm-fruited floricanes raspberry. **Origin:** Univ. of Maryland by H.J. Swartz; (Titan x Willamette) x Glen Moy; sel. 1992 at the Wye Institute in Queenstown, Md.; tested as JAM-1 as part of the Universities of Maryland, Rutgers, Wisconsin River Falls, and Virginia Polytechnic Institute Bramble Breeding Program; USPPAF. **Fruit:** large; very long narrow cavity; firm in a range of environments; mid- to late-season ripening; mild flavor; suited to shipping. **Plant:** moderately vigorous and productive; sturdy, upright canes; well-presented fruit; short chilling requirement. susceptible to damage from fluctuating spring temperatures; susceptible to damage from excess residue levels of several commonly used herbicides.

**Esta (Esther).**—A vigorous, early-ripening, floricanes fruiting raspberry. **Origin:** cross made by D.L. Jennings at the Scottish Crop Research Institute (SCRI); Southland x SCRI 8216B6; sel. 1989 at the Univ. of Maryland; tested as GEL-114 as part of the Universities of Maryland, Rutgers, Wisconsin River Falls and Virginia Polytechnic Institute Bramble Breeding Program; USPPAF. **Fruit:** medium size; medium red; round to conic; firm except at high temperatures. **Plant:** very vigorous in the mid-Atlantic region; rapid cane growth; high yield; abundant primocane production; primocane fruiting in warmer climates; only moderately winter hardy but resistant to fluctuating winter temperatures. Resistant to leaf and cane diseases; susceptible to root rot.

*Esther.*—See Esta.

**Frosta.**—A floricanes fruiting raspberry suited to greenhouse production. **Origin:** The Norwegian Crop Research Institute, Kvithamar, Stordal, Norway by R. Nestby; Norma x Chilliwack; selected in 1990; tested as N86-26-108. **Fruit:** small; dark glossy red; firm; good shelf life; midseason ripening; suited to fresh market and to processing; probably suited to machine harvest. **Plant:** high yield in greenhouse production; moderate vigor and cane production; fairly erect canes; few spines. Resistant to cane diseases.

**Gradina.**—A high-yielding, late-ripening floricanes fruiting raspberry. **Origin:** Fruit Research Institute, Cacak, Yugoslavia, by P.D. Mistic, V.Z. Bugarcic and M.B. Tesic; Malling Exploit x Rubin; introd. In 1973. **Fruit:** large; red; firm; truncate-conic shape; pleasant sweet-acid flavor; easy to harvest; ripens later than Willamette; suited to fresh market and to processing. **Plant:** vigorous, relatively upright floricanes with secondary buds; spines; adapted to relatively poor soil conditions; adapted to cooler temperatures. Moderately susceptible to spur blight; tolerance to viruses.

**Hitra.**—A high-yielding floricanes fruiting raspberry suited to fresh market. **Origin:** The Norwegian Crop Research Institute, Kvithamar, Stordal, Norway by R. Nestby; N80-08 ([Distad selfed] selfed) x Asker; sel. 1992; tested as N88-196. **Fruit:** very large; light red color; firm; good flavor; fresh market use but acceptable for

processing; can be machine harvested. **Plant:** yield similar to that obtained from Glen Ample in Norway; relatively few fairly erect primocanes with few spines. Resistant to cane diseases.

**Josephine.**—A large-fruited primocane raspberry. **Origin:** Univ. of Maryland by H.J. Swartz; Amity x Scottish Crop Research Institute 18E6; cross made in 1989; sel. 1993 at Rutgers Fruit Research Station, Cream Ridge, N.J.; tested as JEF-f1 as part of Universities of Maryland, Rutgers, Wisconsin River Falls, and Virginia Polytechnic Institute Bramble Breeding program; USPPAF. **Fruit:** very large, firm; round; reasonable flavor; ripens on primocanes 10 days later than Caroline. **Plant:** very productive; vigorous; abundant numbers of primocanes. Resistant to late rust and to several leaf hopper species.

**Krupna Dvorodna.**—A high-quality raspberry fruiting on both flori- and primocanes. **Origin:** Fruit Research Institute, Cacak, Yugoslavia by P.D. Mistic, V.Z. Bugarcic, and M.B. Tesic. Malling Exploit x Rubin; introd. 1973. **Fruit:** large; firm; attractive red; truncate-conic shape; uniform drupelets which ripen evenly; excellent sweet-acid flavor; easy to harvest; floricanes crop ripens early; primocane crop ripens through September and October; suited to fresh market and to processing including individual quick freeze. **Plant:** moderate yield; moderately vigorous spiny canes. Not particularly winter hardy and best adapted to warmer climates.

**Podgorina.**—A high-yielding floricanes-fruiting raspberry. **Origin:** Fruit Research Institute, Cacak, Yugoslavia, by P.D. Mistic, V.Z. Bugarcic, and M.B. Tesic. Rote Wadenswiler x Latham; introd. 1980. **Fruit:** large; relatively firm; red; truncate-conic shape; attractive appearance; easy to harvest; midseason ripening; suited to fresh market and to processing. **Plant:** somewhat sprawling growth habit; moderately vigorous spiny floricanes; relatively late leaf out; escapes damage from snow and late frosts; suited to cooler growing conditions. Moderately susceptible to spur blight.

**Pokusa.**—A large-fruited primocane raspberry. **Origin:** Brzezna, Poland, Experiment Station of the Research Institute of Pomology and Floriculture in Skierniewice, by J. Danek. P 86594 x P 87432 (selections have Autumn Bliss, Heritage, *Rubus odoratus*, and *R. occidentalis* in derivations); tested as P 93454; introd. 2001. **Fruit:** large to very large; medium to large drupelets; red to dark red, somewhat dull; medium firm; uniform oval to conic shape; midseason primocane ripening similar to Polana; suited to fresh market and to production under protective covering; moderately susceptible to rot. **Plant:** less productive than Polana; vigorous; upright habit arching at top. Moderately susceptible to mosaic virus complex.

**Polka.**—An early-ripening primocane raspberry. **Origin:** Brzezna, Poland Experiment Station of the Research Institute of Pomology and Floriculture in Skierniewice, by J. Danek. Open-pollinated selection from P 89141 which has Autumn Bliss in its derivation; tested as P 93563; introd. 2001. **Fruit:** medium to large; glossy medium red; conic shape; firm; medium-size drupelets; excellent sweet flavor; ripens ≈10 days earlier than Polana; suited to fresh market and to processing; relatively low susceptibility to rot. **Plant:** easily established; moderately vigorous and similar to Polana but slightly less upright; moderate numbers of uniform canes. Relatively low susceptibility to root rot and to mosaic virus complex.

**Ruvi.**—A productive midseason floricanes raspberry with good-quality fruit. **Origin:** Fruit Research Institute Pitesti-Maracineni, Ages, Romania, by P. Mladin. Rubin Bulgarese x Viking; cross made in 1985; sel. 1989; tested as 85-1016/3; introd. 1996. **Fruit:** large (4 g average); medium red and glossy; medium firm and cohesive; conic, slightly irregular shape; easy to harvest; good quality; midseason ripening; suited to individual quick freeze. **Plant:** vigorous, erect with few spines; fruit laterals medium to long; moderate primocane production; moderate winter hardiness. Some resistance to spur blight; susceptible to cane spot and to root rot; resistant to raspberry bushy dwarf.

**Star.**—An early fruiting floricanes raspberry with excellent quality. **Origin:** Fruit Research Institute Pitesti-Maracineni, Ages, Romania by P. Mladin. Cayuga x Orrs Seedling (a Russian cultivar of unknown origin); cross made in 1983; sel. 1989; tested as 83-1-60; introd. 2000. **Fruit:** medium size; medium red somewhat dull; firm; shelf life similar to Cayuga; easy to harvest; good flavor; relatively high soluble solids; early ripening; suited to fresh market. **Plant:** relatively high

yield; vigorous, spine free canes; relatively upright but need support at harvest; moderate production of primocanes; medium length laterals; relatively winter hardy. High resistance to spur blight and to powdery mildew; tolerance to anthracnose and leaf spot; resistant to raspberry bushy dwarf virus.

**Stiora.**—A winter-hardy floricanic fruiting raspberry for fresh market use. **Origin:** The Norwegian Crop Research Institute, Kvithamar, Stodal, Norway by R. Nesby. NN80-08 ([Distal selfed] selfed) x Asker; sel. 1992; tested as N88-13-209. **Fruit:** very large; light red; firm; good flavor; mid-to late-season ripening; acceptable for processing; probably suited to machine harvest. **Plant:** yield similar to Glen Ample; relatively few primocanes; a few spines. Resistant to cane diseases.

**Tambar.**—A high-yielding floricanic fruiting raspberry. **Origin:** The Norwegian Crop Research Institute, Kvithamar, Stodal, Norway, by R. Nestby. Skeena x Asker; sel. 1992; tested as N88-16-102. **Fruit:** medium to large; firm; dark red; good flavor with high soluble solids; late ripening; suited to fresh market and to processing; probably suited to machine harvest. **Plant:** yields similar to Glen Ample; moderate numbers of fairly erect canes with some short spines. Some resistance to cane diseases except cane spot.

**Varnes.**—A large-fruited floricanic raspberry. **Origin:** The Norwegian Crop Research Institute, Kvitamar, Stodal, Norway, by R. Nesby. ORUS 1846 open-pollinated selection x ORUS 576/47; sel. at Puyallup, Washington in 1987; tested as N86-55-12. **Fruit:** large; firm; apricot color; firm; relatively good shelf life. **Plant:** good yield; moderate primocane production; canes erect with few spines; relatively poor winter hardiness in mid-Norway. Resistant to cane diseases.

## STRAWBERRY

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**AC-Saint-Pierre.**—A new June-bearing cultivar for east-central Canada with excellent shelf-life and that does not darken in storage. **Origin:** developed by S. Khanzadeh, O. Carisse, M. Deschenes (Agriculture and Agri-Food Canada, St-Jean-sur-Richelieu, Quebec), J. DeEll (Ontario Ministry of Agriculture, Food and Rural Affairs, Vineland Station, Ontario), and L. Gauthier (Les Fraises de l'Île d'Orléans Inc., St-Laurent, Île d'Orléans, Quebec). Chandler x Jewel; cross made in 1989; tested as SJ89264-6. PPAF. **Fruit:** very large (14 g); firm; glossy; light-red color; color holds in storage; flesh light red. **Plant:** vigorous; upright growth habit; 2-5 inflorescences per crown; yields moderate, similar to Honeoye. Tolerant of winter temperatures below -30°C with straw mulch. Susceptible to *Phytophthora fragariae* (A1-A6); similar to Honeoye in tolerance of leaf scorch (*Diplocarpon earliana*), leaf blight (*Dendrophoma obscurans*) and leaf spot (*Mycosphaerella fragariae*).

**Alice.**—A late-season June-bearing strawberry with large, sweet berries; adapted for northern Europe. **Origin:** HRI East Malling, U.K., by D.W. Simpson. Complex pedigree includes Korona, Totem, Holiday, Tioga, Redgauntlet, Gorella, Redchief, Wiltguard, and Surecrop; cross made in 1992; sel. in 1993; tested as EM726; rel. in 2000. **Fruit:** conical shape; glossy with orange-red color and prominent achenes; firm and juicy with sweet flavor; good shelf life; large size and low percentage waste; ripens 7 days later than Elsanta and has a longer harvesting season; suitable for fresh market; PYO and home gardens. **Plant:** short-day type; more vigorous than Elsanta with erect habit and good fruit display; yield similar to Elsanta but larger average fruit size; good runner production; moderately resistant to wilt (*Verticillium dahliae*) and crown rot (*Phytophthora cactorum*); susceptible to powdery mildew (*Sphaerotheca macularis*).

**Alta Vista.**—A high-quality low-acid everbearing cultivar of light-red color that is adapted to summer production in coastal California and northern European production areas. **Origin:** T.M. Sjulín, B.D. Mowrey, A.Q. Amorao, J.F. Coss, K. Nichimori, K.L. Gilford. Driscoll's Strawberry Assoc., Inc., Watsonville, Calif. Key Largo x

L2; sel. in 1993; patented in 2000; USPP 11554. **Fruit:** larger (24 g) than Key Largo; wedge to wedge-conic; red to red-orange skin color, similar to Key Largo; flesh is white to pale rose; better flavor than Commander; similar production cycle to Commander but with greater late-season yield; production from mid-April to early-November. **Plant:** day-neutral, more vigorous, upright and dense than Commander; requires 4-6 weeks supplemental cold storage before planting. Moderately susceptible to angular leafspot (*Xanthomonas fragariae*) and botrytis fruit rot, moderately resistant to powdery mildew; susceptible to verticillium wilt, two-spotted spider mite and lygus bugs.

**Baeza.**—A high-quality moderate-acid everbearing cultivar of medium-red color that is adapted to summer production in coastal California and northern European production areas. **Origin:** A.Q. Amorao, B.D. Mowrey, K.L. Gilford, J.I. Espejo, and T.M. Sjulín. Driscoll's Strawberry Assoc., Inc., Watsonville, Calif., M1xZ2.; sel. in 1991; tested as DX-3; patented in 2000; USPP 11548. **Fruit:** medium-large (21 g), conical; red skin with light red flesh; medium glossiness; very sweet with medium acidity. **Plant:** day-neutral; early to very early ripening; moderate yields; open, medium dense, flat habit; vigorous; few to medium number runners. Moderately resistant to botrytis fruit rot, powdery mildew, drought, high temperatures high pH, and high soil salt levels; moderately susceptible to angular leaf spot; susceptible to two-spotted spider mite, *Tarsonemus pallidus*, *Aphelenoides fragariae*, *Aphis* sp., and *L. hesparus*.

**Biscayne.**—A high-quality, early-fruiting and partially everbearing, productive cultivar adapted for Florida production. **Origin:** K.L. Gilford, B.D. Mowrey, J.C. Campos, T.M. Sjulín, and L.T. Kodama. Driscoll's Strawberry Assoc., Inc., Watsonville, Calif. Key Largo x L3; sel. in 1994, patented in 2001; USPP 12186. **Fruit:** medium size (19.8 g); conical; medium red with medium red flesh; medium gloss; large calyx; soft-medium firmness; medium sweetness and acidity; **Plant:** vigorous; medium dense, flat habit; many runners; yield is greater than for Key Largo and Captiva but less than Mirador. Moderately susceptible to angular leaf spot and botrytis fruit rot; susceptible to powdery mildew, verticillium wilt, two-spotted spider mite, lygus bug and aphids; and moderately resistant to strawberry mottle virus.

**Captiva.**—An early-season low-acid short-day cultivar of medium-red color that is adapted to winter production in central Florida. **Origin:** K.L. Gilford, B.D. Mowrey, A. Fuentes, J.I. Espejo, Jr., and T.M. Sjulín. Driscoll's Strawberry Assoc., Inc., Watsonville, Calif. Key Largo x L1.; sel. in 1993; patented in 2000; USPP 11277. **Fruit:** large (19.4 g); conical; dark red; with light red flesh; glossy, firm; very sweet with medium acidity; very early to early production. **Plant:** medium dense to dense; few to medium number of runners. Moderately resistant to drought, high temperatures and botrytis fruit rot and susceptible to two-spotted spider mite, *T. pallidus*, *A. fragariae*, *Aphis* sp., and *L. hesparus*.

**Christina.**—An early strawberry of complex parentage that includes germplasm of British, North American, and Italian origin. **Origin:** Medway Fruits U.K. by D. Jennings, Beggar Ltd. **Fruit:** excellent flavor; light, non-glossy color and typically maintains its good shape under cool conditions; large fruit (30 g); excellent shelf life. **Plant:** similar cropping season to Honeoye, Elvira, and Rosie; yields similar to Rosie. High resistance to powdery mildew and verticillium wilt.

**Civero.**—An early flowering and firm fruited short-day strawberry that produces earlier than Chandler. **Origin:** M. Lei, D. Musacchi, and A. Martinelli, C.I.V. Consorzio Italiano Vivaisti, Ferrara, Italy. Chandler x Selva.; patented in 2000; USPP 11555. **Fruit:** similar or slightly smaller than Chandler with higher soluble solids and lower acidity; truncated-conical shape; very firm; flesh medium red with skin color slightly lighter than Chandler. **Plant:** globose with abundant runners; less productive than Chandler; up to 1 week earlier ripening than Chandler. Medium susceptibility to most strawberry root diseases and powdery mildew.

**Filon.**—A high-yielding, very winter-hardy, late midseason, short-day cultivar. **Origin:** Research Institute of Pomology and Floriculture, Skierniewice, Poland, by E. Zurawicz. Seal x Selva; cross made in 1990; sel. in 1992; tested as SK-1476 in 1992-97 and as ISS 997 in



1997–2000. **Fruit:** the same ripening season as Senga Sengana; large size, larger than Senga Sengana and similar to Kent; flavor is very good, with a characteristic strawberry aroma; firmness is good; skin is glossy and of medium toughness; bright red to red; flesh color is uniform, medium red; shape very regular, conical. **Plant:** short-day; good vigor and runner production; yield higher than Senga Sengana and Elsanta. Only slightly susceptible to gray mold. High resistance to leaf spot, leaf scorch and Verticillium wilt and moderate resistance to powdery mildew. Very winter hardy. Good for fresh market, processing, and home garden.

**L'Authentique Orléans.**—A new June-bearing strawberry cultivar for eastern central Canada with high levels of ellagic and gallic acids, catechin and epicatechin. **Origin:** S. Khanizadeh, L. Gauthier, J. Cousineau, D. Buszard, and C. Hébert, Agriculture and Agri-Food Canada, Les Fraises de l'Île d'Orléans Inc., McGill Univ., Quebec, Canada. AC-L'Acadie x AC-Yamaska; cross made in 1996; tested as FIO-9623-55. **Fruit:** very firm; large; long shelf life; high levels of proanthocyanidins, ellagic acid, gallic acid, catechin, and epicatechin. **Plant:** vigorous on nonfumigated soils compared with Chandler; high yielding.

**Malah.**—An early infra short-day cultivar, that is one that initiates flower buds under long light regimes at  $\approx 22^{\circ}\text{C}$ , for polyethylene tunnel production. **Origin:** State of Israel, Ministry of Agriculture, Rehovot by E. Izsak and S. Izhar. Dorit x Chandler; patented in 2000; USPP 11255. **Fruit:** large (40 g) primary and medium-large (28 g) secondary fruit; biconical shape; firm; orange-red with light red flesh; glossy; sweet with low acidity. **Plant:** dense; medium-strong vigor; yield greater than Chandler; ripens 1/3 of its crops in first three months of the season vs. 10% for Chandler, although not as large an early crop as Tamar; early November ripening; constant fruiting with no cycling. Shows no tendency towards fruit malformation in tunnel production.

**Montalvo.**—A large-fruited everbearing cultivar of medium-red color adapted to late-season production in coastal California areas. **Origin:** A.Q. Amorao, A. Solis, Jr., T.M. Sjulín, J.I. Espejo, Jr. Driscoll's Strawberry Assoc., Inc., Watsonville, Calif. Mr. P. x R1; sel. in 1992; patented in 2000; USPP 11522. **Fruit:** medium-large (19 g); conic to biconic; primary fruit are more creased and fan-shaped than secondary fruit; orange-red with orange flesh; early ripening; fruit have medium sweetness and acidity. **Plant:** day-neutral; early; season of harvest is October–December in southern California; open, medium dense habit; vigorous; few to medium number runners. Moderately resistant to drought and high temperatures; moderately susceptible to wind, water logging, *T. urticae*, *Ramularia tulasnei*, powdery mildew and botrytis fruit rot; susceptible to high pH, high soil salt levels, *Aphis* sp. and verticillium wilt; and resistant to strawberry mottle virus and *X. fragariae*.

**Prelude.**—A small fruited June-bearing cultivar with very easy calyx removal and good processing qualities. Not the same as the 1980 release from North Carolina with the same name. **Origin:** PERNOD RICARD, France. Primek x sel.; cross made in 1989; sel. in 1991 and tested as 89 J2 145 1; French Plant Patent C.O.V. N° 012271, E.C. Plant Patent N° 98/1325. **Fruit:** small round (5–6 g); firmer than Primek and Senga Sengana; good shelf life and shipping quality; caps very easily when picked; dark red external color with bright red flesh; highly aromatic intense, wild strawberry flavor; good balance sugar/acidity. *Processing qualities:* frozen product excellent when bulk frozen or IQFed; low drip loss on thawing; whole small fruits and bright red color are preserved after cooking; used for toppings and in confections. **Plant:** short day; very vigorous; earlier than Senga Sengana; upright and open habit; erect flowers trusses; high runner production for matted row cultivation; fruits over the canopy; higher yield than Primek and Senga Sengana; adapted to temperate climates. Resistant to gray mold; partially resistant to *Colletotrichum acutatum* and medium susceptibility to *P. cactorum*, in glasshouse tests.

**Puget Summer (Schwartz).**—A productive, late-season, short-day cultivar adapted to the Pacific Northwest North America. **Origin:** Washington State Univ., Puyallup, Wash., by P.P. Moore and C.E. Finn. Nanaimo x ORUS 1076-124; cross made in 1993; sel. in 1995; tested as WSU 2310; rel. in 1999; USPP 12067; trademarked and marketed under the name Puget Summer®. **Fruit:** very late-season, midpoint of harvest in late June or early July in Puyallup; smooth and

symmetrically conic; primary fruit large, secondaries and tertiaries smaller; fruit held up off ground; excellent fresh flavor. **Plant:** short-day; vigorous; prolific runner production; productive in matted-row production; low incidence of pre-harvest fruit rot. Susceptible to powdery mildew.

**Rosalyn.**—An ornamental strawberry that produces very large, showy blooms all summer long on hardy, attractive plants. **Origin:** Agriculture and Agri-Food Canada, Horticultural Research and Development Centre St-Jean-sur-Richelieu, Quebec by S. Khanizadeh, J. Cousineau, M. Deschênes, and A. Levasseur. Fern x (SJ9616-1 x Pink Panda); cross made in 1994; sel. in 1996 and tested as SJO9620-76. **Fruit:** small-medium size; medium red; moderately firm; excellent flavor. **Flower:** very large (4.3 cm diameter); inflorescences held at canopy level; petal surface color variable but paler pink in center with darker pink margin. **Plant:** moderately vigorous, low growing, forms a medium density bed; very good runner production.

**Sapphire.**—An excellent late-season fresh-market June-bearing cultivar for eastern North America. **Origin:** Univ. of Guelph–Simcoe (formerly the Hort. Res. Inst. of Ontario), Simcoe, Ontario, Canada, by A. Dale. 319A92 x V7737-2; cross made in 1989, sel. in 1991; tested as 53M54; introd. in 2002. **Fruit:** large; bright; average red external and internal color; ripens late-midseason. **Plant:** yielded consistently in trials throughout Ontario; vigorous; winter hardy. Moderately resistant to leaf scorch and powdery mildew. Tolerant to herbicide terbacil (Sinbar).

**Schwartz.**—See Puget Summer.

**Siabelle.**—A June-bearing cultivar with excellent processing qualities. **Origin:** PERNOD RICARD, France. Parker x Mimek; cross made in 1989; sel. in 1991 and tested as 89 X1 25 2; French Plant Patent C.O.V. No. 012272, E.C. Plant Patent No. 98/1326. **Fruit:** similar in size to Senga Sengana (7–8 g); conic; tough skin; very firm flesh; excellent shelf life and shipping quality; easy calyx removal; dark red external color; uniform dark red flesh color; medium aromatic intensity, fresh green flavor; a bit acid; low sugar contents. *Processing qualities:* frozen product excellent when bulk frozen or IQFed; low drip loss on thawing; from whole, sliced or cut product, fruit integrity and bright red color are well preserved after cooking. Recommended for processing uses. **Plant:** short-day cultivar; earlier than Senga Sengana; upright and open habit; erect flowers trusses; very vigorous; high runner production for matted row cultivation; similar to or higher yield than Senga Sengana under continental to temperate climates. Highly resistant to gray mold under warm and rainy conditions; partial resistance to *C. acutatum*; and medium tolerance to *P. cactorum*, in glasshouse tests.

**Tamar.**—A very early, infra short-day cultivar, that is one that initiates flower buds under long light regimes at  $\approx 22^{\circ}\text{C}$ , initiates flower buds under long light regimes at  $\approx 22^{\circ}\text{C}$  for polyethylene tunnel production. **Origin:** State of Israel, Ministry of Agriculture, Rehovot, by E. Izsak and S. Izhar. Oso Grande x Dorit.; patented in 1999; USPP 11135. **Fruit:** very large (45 g) primary and large (34 g) secondary fruit; conical shape, similar to Dorit; medium firmness; red with orange-red flesh; glossy; sweet with low acidity. **Plant:** dense; moderate vigor; yield similar to Chandler but with much more of the crop ripening in the early season; very early ripening (early November); constant fruiting with no cycling. Shows no tendency towards fruit malformation in tunnel production.

**Vikat.**—A winter-hardy, late-season, short-day cultivar with very large fruit and very high yields. **Origin:** Research Institute of Pomology and Floriculture, Skierniewice, Poland, by E. Zurawicz. Vicoda x Dukat; cross made in 1990; sel. in 1992; tested as SK-1483 in 1992–97 and as ISS 1097 in 1997–2000. **Fruit:** ripens 2–3 days earlier than Pandora or Vicoda; size is very large, average size can exceed 40 g; flavor and taste are good; firmness is medium; skin is medium glossy and of medium toughness; brownish-red; flesh color is uniform, dark red; somewhat irregular, conic shape. **Plant:** short-day; good vigor, but very weak runner production; yield is very high, usually higher than in Senga Sengana. Medium susceptibility to gray mold; high resistance to leaf spot, leaf scorch; moderate resistance to powdery mildew and verticillium wilt. Very winter hardy. Good for fresh market, processing and home garden.

**Whonnock.**—A productive mid- to late-season June-bearing straw-

berry, adapted for fresh and processing markets in the Pacific Northwest. **Origin:** Agassiz, British Columbia, Canada, by C. Kempler and H.A. Daubeny, Pacific Agri-Food Centre, Agassiz of Agriculture and Agri-Food Canada. Sumas x Hapil; cross made in 1986, sel. in 1988, tested as BC86-22-33 and rel. in 1998. **Fruit:** larger than Totem; conical, irregular and rough in shape; skin medium red, color lighter than Totem; flesh medium red; achenes at surface; flavor good; firmer than Sumas and Totem; for fresh market and freezing; caps well; ripens 3–5 days after Totem. **Plant:** high yields; vigorous; large leaf size; good runner production. Resistant to Pacific Northwest races of red stele causal organism; tolerant to root weevils; susceptible to powdery mildew.

**Yael.**—A very early, infra short day cultivar, that is one that initiates flower buds under long light regimes at  $\approx 22^\circ\text{C}$ , for polyethylene tunnel production. **Origin:** State of Israel, Ministry of Agriculture, Rehovot by E. Izsak and S. Izhar. Oso Grande x Dorit.; patented in 2000; USPP 11183. **Fruit:** very large (48 g) primary and large (38 g) secondary fruit; conical shape similar to Dorit; firm; red with orange-red flesh; glossy; low acidity, good flavor. **Plant:** dense; vigorous; yield greater than Chandler; ripens 1/3 of its crop in first 3 months of season vs. <10% for Chandler, although not as large an early crop as Tamar; very early ripening (early November); constant fruiting with no cycling. Shows no tendency towards fruit malformation in tunnel production.

### TROPICAL FRUIT

Robert J. Knight, Jr.

Univ. of Florida, Tropical Research and Education Center  
Homestead, Fla.

### TROPICAL FRUIT—ABIU

**Graudo.** A selection of *Pouteria caimito*, a minor member of the Sapotaceae also known as yellow star apple or caimito. **Origin:** Univ., State of São Paulo, Jaboticabal, Brazil; seed from Amazonia. **Tree:** 8.83 m high, 6.96 m canopy spread, 24.1 cm trunk width. Fruit production is medium. **Fruit:** 65.5 cm long by 9.45 cm wide, weighing 218 g; skin 45.87%, pulp 49.54%, seed 4.59%; TSS 11.5 °Brix. (Proc. Interamer. Soc. Trop. Hort. 40:52–53).

### TROPICAL FRUIT—CANISTEL

**Estação.** A selection of *Pouteria campechiana*, a member of the Sapotaceae, also known as yellow sapote. **Origin:** Univ., State of São Paulo, Jaboticabal, Brazil; seed from Florida. **Tree:** 5.75 m high, canopy 5.15 m wide, trunk 19.5 cm wide; leaves 18.1 cm long by 5.54 cm wide, 2.74 cm in petiole length. **Fruit:** yellow and pointed, 9.2 cm long by 7.83 cm wide, weighing 274 g; skin 3.57%; pulp 75.76%, seed 20.67%. (Proc. Interamer. Soc. Trop. Hort. 40:52–53).

### TROPICAL FRUIT—MAMEY SAPOTE

**Akil Adelantado.** A selection of *Calocarpum sapota*. **Origin:** Akil, Yucatan, Mexico. **Fruit:** 170 mm long by 100 mm wide, weighing 883 g; seed weight 65 g, skin weight 100 g. Pulp dark red, moist; fruit of uniform size. Season August.

**Akil Especial.** An early selection of *Calocarpum sapota*. **Origin:** Akil, Yucatan, Mexico. **Fruit:** 125 mm long by 83 mm wide, weighing 371 g; seed weight 39 g, skin weight 85 g. Pulp dark red, moist and of uneven color and little flavor. Early season brings favorable prices. Season April–June.

**Alejas.** A selection of *Calocarpum sapota*. **Origin:** Pustunich, Yucatan, Mexico. **Fruit:** 173 mm long by 87 mm wide, weighing 710 g; seed weight 56 g, skin weight 129 g. Pulp light red; fruit striated, uneven ripening. Season July–September.

**Celso 3.** A selection of *Calocarpum sapota*. **Origin:** Oxtutzcab, Yucatan, Mexico. **Fruit:** 136 mm long by 74 mm wide, weighing 436 g; seed weight 35 g, skin weight 70 g. Pulp orange/light red; fruit sweet, uneven ripening, tough skin. Season August.

**Cepeda Especial.** A selection of *Calocarpum sapota*. **Origin:**

Akil, Yucatan, Mexico. **Fruit:** 117 mm long by 80 mm wide, weighing 387 g; seed weight 45 g, skin weight 73 g. Pulp red, sweet, moist, uniform, browning. Season April–June.

**Red.** A selection of *Calocarpum sapota*. **Origin:** Univ., State of São Paulo, Jaboticabal, Brazil; seed brought from Florida. **Tree:** 8.2 m tall, canopy spread 8.9 m, trunk diameter 29.4 cm; leaf 26.9 cm long, 9.8 cm wide, petiole 2.5 cm long. Yield varies from 100–500 fruit, averaging 207 fruits in the last 3 years observed. **Fruit:** of superior quality, measuring 12.3 cm long by 8.63 cm wide, weighing 523.33 g; skin 12.73%, pulp 77.4%, seed 9.87%; TSS 26.33 °Brix.

**Vidal Redondo.** A selection of *Calocarpum sapota*. **Origin:** Oxtutzcab, Yucatan, Mexico. Season June–July. **Fruit:** 118 mm long by 80 mm wide, weighing 425 g; seed weight 34 g, skin weight 64 g. Pulp light red, sweet, moist, uniform, browning. (Reference for all cvs: Proc. Interamer. Soc. Trop. Hort. 41:219–222; Proc. Interamer. Soc. Trop. Hort. 40:52–53).

### TROPICAL FRUIT—SAPODILLA

**Khaki.** A selection of *Manilkara zapota*. **Origin:** Univ., State of São Paulo, Jaboticabal, Brazil; seed brought from Florida. **Tree:** productive, 9.15 m tall, 8.56 m in canopy width, 28.6 cm in trunk diameter; leaf 9.84 cm long, 3.16 cm wide and 1.94 cm in petiole length. **Fruit:** 4.4 cm long by 6.1 cm wide, weighing 90 g; skin 10%, pulp 74.9%, seed 1.6%; TSS 18 °Brix. (Proc. Interamer. Soc. Trop. Hort. 40:52–53).

### TROPICAL FRUIT—ZAPOTE CHUPA

**Portoviejo.** A selection of *Matisia cordata* H.B.K. [*Quararibea cordata* (Humb. et Bonpl.) Garc. et. Hern.], also known as chubachuba. **Origin:** Portoviejo region, Manabí, Ecuador. **Fruit:** rounded, 13.1 cm long by 12.3 cm wide, slightly depressed at the apex, weighing 938 g, with the rind of a medium-olive color, making up 63.6% of the fruit; pulp of a deep orange color, attractive, in 5 carpels composing 28.6%; peduncle maroon and  $\approx 4.43$  cm long; 5 seeds per fruit or one seed per carpel. Mature fruit is of hard consistency, firm to the touch, aromatic, of an agreeable taste. The point of harvest is determined when the rind of the fruit around the calyx forms a wide yellowish-cream halo; soluble solids 17.3%, acidity 0.16%, ratio T.S.S./acidity 108.1:1; vitamin C 27.5%, fiber medium in content. Seeds buried in the pulp with the ridge toward the fruits interior, 7.8% of total fruit weight, 4.98 cm long, 2.98 cm wide, weight  $\approx 15.0$  g; form ovoid, external cover fibrous, length of the fibers adherent to the seed  $\approx 2.64$  cm. Medium susceptibility to drought and wind, high susceptibility to flooding. Low susceptibility to fruit flies (*Anastrepha* sp.). This fruit is valued in the fresh market for its fine sweet flavor and aroma as well as the notably intense orange color of the pulp. The high content of vitamin C or ascorbic acid, phosphorus and carotene are outstanding. **Tree:** height of tree in the wild can reach 12 m, but pruning and training can keep this from 3.5–4.0 m in the orchard. Fruit production of trees grafted on common seedlings begins after 3 1/2 years. (Proc. Interamer. Soc. Trop. Hort. 41:223–227).

### INDEX OF VARIETIES DESCRIBED

(synonyms in italics)

315-80-67 PLUM

AC-Saint-Pierre STRAWBERRY

Akil Adelantado TROPICAL FRUIT—MAMEY SAPOTE

Akil Especial TROPICAL FRUIT—MAMEY SAPOTE

Alapaha BLUEBERRY

Alejas TROPICAL FRUIT—MAMEY SAPOTE

Alice STRAWBERRY

Alta Vista STRAWBERRY

Andy G's Son CHERRY—SWEET

Apache BLACKBERRY (Addendum)

Arlen BLUEBERRY

Arrington NECTARINE

Augusta BLUEBERRY

Autumn Rose APPLE

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 Baeza STRAWBERRY  
 Balaton CHERRY—TART  
*Banning* APPLE  
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 Barnet PEAR—EUROPEAN  
 Ben Gairn CURRANT  
 Ben Hope CURRANT  
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 Blakeney Red PEAR—EUROPEAN  
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FRUIT AND NUT REGISTER

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 USPP 12952 Ruby Bright NECTARINE  
 USPP 12954 Grand Sweet NECTARINE  
 USPP 12955 Grand Candy NECTARINE  
 USPP 12968 Diamond June NECTARINE  
 USPP 12974 Golden Princess PEACH  
 USPPAF Alapaha BLUEBERRY  
 USPPAF Arrington NECTARINE  
 USPPAF Bradley NECTARINE  
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 USPPAF Columbia CHERRY—SWEET  
 USPPAF Emily RASPBERRY  
 USPPAF Esta RASPBERRY  
 USPPAF Gulfprince PEACH  
 USPPAF Gulfrose PLUM  
 USPPAF Josephine RASPBERRY  
 USPPAF Kumeu Crimson Braeburn APPLE  
 USPPAF La Crescent GRAPE  
 USPPAF Liberty Bell CHERRY—SWEET  
 USPPAF Millennia BLUEBERRY  
 USPPAF Newfane CHERRY—SWEET  
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 USPPAF Ultima Gala APPLE  
 USPPAF Westbrook NECTARINE

Varnes RASPBERRY  
 Vidal Redondo TROPICAL FRUIT—MAMEY SAPOTE  
 Vikat STRAWBERRY  
 Westbrook NECTARINE  
*WhiteGold* CHERRY—SWEET  
 Whonnock STRAWBERRY  
 Winal's Longdon PEAR—EUROPEAN  
 Yael STRAWBERRY  
 Yellow #503 PLUM  
 Yellow Huffcap PEAR—EUROPEAN  
 Zesta APPLE (Addendum)  
 Zestar! APPLE (Addendum)

## ADDENDA AND REVISIONS TO PREVIOUS LISTS

### APPLE

**Cameo™ (Caudle).**—Updated to show assignment of USPP 9068 (3<sup>rd</sup> edition of book).

**Corail® (Pi-A 11-24).**—Name changed from Pinova and assignment of USPP 11601 (List 39).

**GoldRush (Co-op 38).**—Updated to show assignment of USPP 9392 (3<sup>rd</sup> edition of book).

**Myra Fuji (Van Leuven).**—Updated to show cultivar name (Van Leuven) and to correct ripening date from 3–4 weeks before Fuji to 5–7 days (List 39).

**Pristine (Co-op 32).**—Updated to show assignment of USPP 9981 (3<sup>rd</sup> edition of book).

**September Wonder™ Fuji (Fiero).**—Name changed from Jubilee Fuji; assignment of USPP 11193 (List 39).

**Zestar™ (Mn 1824).**—Name changed from Zesta (List 39).

### BLACKBERRY

**Apache.**—USPP 11865 issued 8 May 2001 to Univ. of Arkansas (List 40).

**Chickasaw.**—USPP 11861 issued 8 May 2001 to Univ. of Arkansas (List 40).

### CHERRY

**Hartland.**—USPP 11034 issued 17 Aug. 1999 (List 36).

**Royalton.**—USPP 11107 issued 19 Oct. 1999 (List 36).

**Skeena.**—USPP 11392 issued 30 May 2000 (List 39).

**Somerset.**—USPP 11118 issued 9 Nov. 1999 (List 36).

**Sumleta Sonata.**—USPP 11378 issued 9 May 2000 (List 39).

**Surefire.**—USPP 11108 issued 26 Oct 1999 (List 36).

**Tieton™.**—USPP 11385 issued 16 May 2000 (List 39).

### GRAPE

**Neptune.**—USPP 12302 issued 25 Dec. 2001 to the Univ. of Arkansas (List 40).

**Princess.**—Released in 1999 and named Melissa but now renamed Princess in 2001 because of a trademark conflict (List 40).

**Scarlett.**—USPP 11260 issued 7 Mar. 2000 to Univ. of Georgia Research Foundation, Inc. (List 40)

### PEACH

**UFGold.**—USPP 10315 issued. (Fruit Var. J. 51:76–77) (List 39).

### PEACH—ROOTSTOCK

**Paramount.**—Market name adopted for GF677 (List 35).

**Guardian™.**—Market name adopted for BY520-9. Plant Variety Protection PVP 9400013 issued June 14, 2001 (List 37).

**PEAR—ROOTSTOCK**

**Rhenus 1 (Pyrodwarf).**—USPP 11041 issued 24 Aug. 1999 to Helmut B. Jacob, Geisenheim, Germany (List 39).

**PREVIOUS LISTS**

List 40 in HortScience 35(5):812–826 (2000).  
List 39 in HortScience 34(2):181–205 (1999).  
List 38 in HortScience 32(5):785–805 (1997).  
List 37 in HortScience 30(6):1135–1150 (1995).

List 36 in HortScience 29(9):942–969 (1994).

List 35 and earlier lists are included in The Brooks and Olmo Register of Fruit & Nut Varieties, 3rd ed. (1997), ASHS Press. This book also contains a few previously undescribed varieties which later appeared in Lists 36–41.

**MASTER INDEX**

A complete index of varieties in Lists 36–41 will be available at the ASHS <[www.ashs.org](http://www.ashs.org)> and American Pomological Society <<http://hortweb.cas.psu.edu/aps/>> web sites