Register of New Fruit and Nut Varieties

Brooks and Olmo

List 38

Edited by W.R. Okie

U.S. Department of Agriculture, Agricultural Research Service, Southeastern Fruit and Tree Nut Research Laboratory, 111 Dunbar Road, Byron, GA 31008

Crop Listings¹: Almond Rootstocks, Apricot, Apricot Rootstocks, Blackberry, Black Walnut, Blueberry, Currant, Gooseberry, Grape, Grape Rootstocks, Hickory, Peach Rootstocks, Pear—European, Pear—Asian, Pecan, Plum—Asian, Plum Rootstocks, Plumcot, Quince, Raspberry, Strawberry

ALMOND ROOTSTOCKS

T.G. Beckman

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Adesoto 101.—Has shown good compatibility with cvs. tested. Described under Peach Rootstocks.

Viking.—An interspecific hybrid compatible with peach and almond. Orig. by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger of Zaiger Genetics, Modesto, Calif., United States. Selected from a cross of Nemaguard peach and 14H528 (Jordanolo almond x *P. blireiana*). Easily propagated by hardwood cuttings. As a rootstock Viking can be budded earlier in the nursery than can Nemaguard seedlings. Mature almond trees on Atlas are ≈25% larger and have larger yields and kernel size compared to those on Nemaguard seedlings. Compared to almond trees on Hansen 536, Hansen 2168, almond trees on Viking have greater tolerance to heavy wet soils and are less susceptible to Phytophthora. **Tree:** when unbudded is vigorous, upright growth habit with light brown branches. Leaves: large, green to dark green upper surface with a light green lower surface, crenate margin, with several reniform glands at base of leaf blade. Flowers: light pink, nonshowy, pollen present. **Fruit:** globose, with slightly bulging suture, small size (51 mm in diam.), white fleshed. Skin is yellowish white and pubescent. Pit: semi-freestone. USPP² 8912 (27 Sept. 1994)

APRICOT

Richard E.C. Layne

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Craig Ledbetter
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Helena.—A large, firm apricot variety intended for the fresh market. Orig. in Fresno, Calif. B67-10 x open-pollinated; selected in 1974; tested as K 210-35; introduced by the USDA/ARS in 1994. **Fruit:** large, typically 125 g; skin is orange with a speckled blush on sun-exposed side; flesh is orange, firm, fine-textured, medium juicy, and does not adhere to the pit; ripens in early June just before Patterson in central California. **Tree:** vigorous, slightly spreading, bears regularly with fruit set on one year shoots and spurs; flowers are self-compatible but are heterozygous for male sterility.

EarlyBlushTM.—See NJA 53.

NJA 53 (EarlyBlushTM).—An attractive, very early-ripening apricot variety with high fruit quality intended for the fresh market. Orig. in New Brunswick, N.J., by L.F. Hough and K.H. Bailey, Rutgers Univ. RR17-62 x NJA 13; cross made in 1971; selected in 1979; tested as NJA 53; patented as NJA 53 (USPP 9255); registered trade mark

name is EarlyBlush; introd. in 1995. **Fruit:** medium-sized, globose, and slightly compressed; skin is light to medium orange with a red blush; flesh is orange and juicy; in New Jersey fruit ripens about 2 weeks before Harcot. **Tree:** vigorous, moderately spreading, productive, and bears regularly. Leaves: ovate, abruptly acuminate, obtuse at base, serrate margins; globose glands on petiole; moderate tolerance to bacterial leaf spot.²

NJA 54 (SunGemTM).—An attractive, early-ripening apricot variety with high fruit quality intended for the fresh market. Orig. in New Brunswick, N.J., by L.F. Hough and K.H. Bailey, Rutgers Univ. NJA 2 x RR 17-62; cross made in 1973; selected in 1979; tested as NJA 54; patented as NJA 54 (USPP 8674); registered trade mark is SunGem; introd. in 1995. **Fruit:** small to medium size, globose, slightly compressed; skin is dark orange with a 20% to 40% bright red blush; flesh is orange, fine-textured, very firm; eating quality is excellent, very sweet and aromatic. Fruit ripens in New Jersey about 1 week before Harcot and is tolerant to bacterial spot and brown rot. **Tree:** medium size and vigor; upright, productive and regular bearing. Leaves: ovate, abruptly acuminate, obtuse at base; globose glands on petiole; tolerant to bacterial leaf spot.

Suaprive.—A very large apricot variety intended for the fresh market. Orig. in Bakersfield, Calif., by John Weinberger, Sun World; Castlebrite x open-pollinated; selected in 1978; tested as 049-054; PP8184; issued 23 March 1993; assigned to Sun World Inc., Coachella, Calif. **Fruit:** very large, typically 120 g; elongated with distinct suture; skin is yellow with no blush; flesh is yellow-orange, firm; eating quality is medium; fruit ripens 5 days after Castlebrite in California. **Tree:** consistently productive under a broad range of climatic conditions; low chilling requirement; growth habit is open to slightly weeping.

SunGemTM.—See NJA 54.

APRICOT ROOTSTOCKS

Ademir.—Variable compatibility with apricot cultivars. Described under Plum Rootstocks.

Adesoto 101.—Has shown good compatibility with cvs. tested. Described under Peach Rootstocks.

BLACKBERRY AND HYBRID BERRIES

Hugh Daubeney

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Black Butte.—A trailing, fresh-market blackberry producing large, firm fruit. Orig. in Corvallis, Ore., by C.E. Finn and F.J. Lawrence, USDA–ARS and Oregon State Univ. ORUS 830-4 x ORUS 728-3 (*Rubus ursinus* is primary species in derivation but *R. armeniacus* [*R. procerus*] and *R. idaeus* also occur; tested as ORUS 1129-1; introd. in 1995. **Fruit:** very large; firm; color similar to Marion but with occasional red drupelet; uniform shape with no indication of sterility; good flavor but lacks strong aromatic components of Marion; ripens earlier than Marion and similar to Kotata and with harvest season longer than either. **Plant:** yield similar or slightly higher than Marion; vigorous, trailing, relatively open habit; spiny; relatively strong

¹Thanks 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.

²USPP = United States Plant Patent.

lateralis; flower buds more winter hardy than Marion. Resistant to cane spot and leaf spot.

Douglas Balsg.—A semi-erect spineless blackberry adapted to southern Sweden. Orig. at Swedish Univ. of Agricultural Sciences, Balsgard (Balsg. is name derived from Balsgard), Sweden by B. Sjostedt. Complex parentage involving several *Rubus* species; tested as BRu 82/1607-2; introd in 1994. **Fruit:** medium to large; black; nearly spherical; sour flavor; ripens through September; produced in tight cluster that facilitates harvest. **Plant:** relatively high yield; semi-erect, easily managed, spineless canes; more winter hardy than Black Satin.

Fantasia.—A high-yielding blackberry adapted to southeastern England. Orig. as chance seedling in allotment garden. Introd. in 1994. Propagated by J. Hargreaves & Sons, Spalding, Lincs., England. **Fruit:** large; firm; deep dark black color; good flavor; good shelf life; ripens from mid-August to first frost; easy to harvest from well-exposed lateralis. **Plant:** very high yield; vigorous, spiny, canes. Susceptible to red spider mite.

Kiowa.—An erect-growing blackberry producing large fruit over a long harvest period. Orig. in Fayetteville, Ark., by J.N. Moore and J.R. Clarke, Dept. of Horticulture, Univ. of Arkansas. Ark 791 x Ark. 1058; cross made in 1980; selected in 1983; tested as Ark. 1380; introd. in 1996. USPP pending. **Fruit:** large size maintained throughout harvest season; firm; glossy black; blocky, oblong shape; relatively late season that is of longer duration than most other blackberry varieties; good flavor with relatively high soluble solids content; relatively long storage period; large seed size. **Plant:** moderate yield; moderate vigor; spiny, self-supporting, fairly erect canes; relatively winter hardy; propagated by sucker plants or by root cuttings. Moderately resistant to anthracnose; probably resistant to orange rust; reaction to rosette unknown.

Triple Crown.—A spineless blackberry producing large fruit with an excellent flavor. Orig. in Beltsville, Md., by G.J. Galletta, USDA-ARS. Carbondale 47 x Arkansas 545; selected in 1983; tested as US 1638; introd. in 1996. **Fruit:** large; firm; glossy black; slightly longer than broad shape; balanced subacid, sweet and aromatic flavor; early ripening. **Plant:** relatively high yield; vigorous; forms crowns; spineless canes; fruit well distributed.

BLACK WALNUT

William Reid

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Burns.—Seedling selection from Ontario, Canada. First reported in 1973. Small nut averaging 12 g with 36% kernel. Excellent cracking quality with thin shell. Kernels extracted in halves.

Cranz.—Native selection made by Eugene F. Cranz, Ira, Ohio. Small, elliptic nuts weigh 13 g with 31% kernel. Protogynous flowering. Bears on lateral branches. Midseason nut maturity.

Eldora.—Native selection found in Eldora, Iowa. Large nut weighs 19 g and produces 30% kernel. Protandrous flowering. Early ripening.

El-Tom.—Resulted from a controlled cross of Myers x Thomas made by Sterling Smith, Vermilion, Ohio. Nuts average 16 g with 29% kernel. Early ripening. Recommended in Michigan.

Emma K.—Native selection found by J.C. McDaniel, Univ. of Illinois, in the 1960s. Elliptic nut averaging 17 g with 34% kernel. Excellent shelling characteristics. Bears on lateral branches. Midseason ripening. Recommended in Illinois, Kansas, Michigan, and Missouri.

Fayette-1.—Native selection by W.F. Beineke and patented in 1982 (USPP 4964). Original tree selected for its good timber qualities from a native stand near Bentonville, Ind. The tree is characterized by rapid growth rate, fair tendency for growing a straight central stem, and early time of leafing. The tree bears small nuts that are late ripening and yield only 15% kernel. Strong tendency for alternate bearing. Protandrous flowering habit.

Fayette-2.—Native selection by W.F. Beineke and patented in 1982 (USPP 4968). Original tree selected for its nut production potential from a native stand near Bentonville, Ind. Tree produces abundant annual crops of medium-sized nuts that yield 15% kernel.

Nut ripen in mid-season. Very late leafing and excellent anthracnose resistance. Protogynous flowering habit.

Football.—Seedling selection made during the 1970s by Leon Falconer of Sarcoxie, Mo. Large, elliptic nut weighs 19 g and produces 30% kernel. Susceptible to anthracnose. Bears on lateral branches. Midseason ripening.

Hay.—Originated as a cross of Thomas x Myers made by Leander Hay of Gilliam, Mo. Nuts weigh 20 g and yield 31% kernel. Protogynous flowering. Midseason ripening.

Knox-1.—Native selection by W.F. Beineke and patented in 1982 (USPP 4966). Tree selected for excellent timber qualities from a native stand near Fritchton, Ind. Tree exhibits rapid growth rate and with a fair central stem tendency. Tree bears large nuts annually. The early-ripening nuts produce 17% kernel. Protogynous flowering habit. Earlier than average time of leafing.

Lawrence-1.—Native selection by W.F. Beineke and patented in 1983 (USPP 4971) primarily for excellent timber qualities. Tree discovered near Silverville, Ind. Tree exhibits rapid growth rate and a strong tendency for developing a straight central stem. Protogynous flowering habit. Tree produces large nuts producing 20% kernel. Midseason ripening.

Lawrence-2.—Native selection by W.F. Beineke and patented in 1982 (USPP 4955) primarily for excellent timber qualities. Tree discovered near Huron, IN. This tree is characterized by average growth rate, very strong central stem tendency, early time of leafing, and excellent straightness. Tree produces annual crops of small, late-ripening nuts, yielding 18% kernel. Protandrous flowering.

Ohio.—Native selection found in 1915 by Charles Arbogast in McCutcheonville, Ohio. Medium-sized nuts weigh 16 g yielding 27% kernel. Thick husk. Protogynous flowering. Midseason ripening. Good resistance to anthracnose. Recommended in Nebraska.

Purdue 1.—Native selection by W.F. Beineke and patented in 1980 (USPP 4543). Tree selected for excellent timber qualities from a native stand near Darlington, Ind. Tree displays rapid growth rate, a strong central stem tendency, and outstanding straightness. Tree produces large, early-ripening nuts that yield 20% kernel. Flowering habit is incompletely protogynous.

Purdue 2.—Native selection by W.F. Beineke and patented in 1981 (USPP 4614). Tree selected for excellent timber qualities from a native stand near Camden, Ind. Tree displays rapid growth rate, a strong central stem tendency, and outstanding straightness. Nut crops occur rarely and are very light. Medium-sized nuts are midseason ripening. Protandrous flowering habit. Original tree was cut and sold for high-quality veneer.

Purdue 3.—Native selection by W.F. Beineke and patented in 1980 (USPP 4542). Tree selected for excellent timber qualities from a native stand near Martinsville, Ind. Tree displays rapid growth rate, a strong central stem tendency, and outstanding straightness. Nut bearing characteristics are unknown. Good anthracnose resistance.

Sauber.—Seedling selection made by Paul J. Sauber of Barberton, Ohio. Introduced in 1978 by Wilmoth Nursery, Elizabethtown, Ky. Small, widely elliptic nut averages 15 g and yields 33% kernel. Excellent shelling qualities. Outstanding kernel quality.

Sparks 127.—Seedling selection made by Archie Sparks of Beaver, Iowa. Small, widely elliptical nut weighs 14 g and produces 32% kernel. Protogynous flowering. Bears on lateral branches. Early ripening. Prone to overproduction and alternate bearing.

Sparks 147.—Seedling selection made by Archie Sparks of Beaver, Iowa. Medium-sized, elliptical nut weighs 17 g and yields 38% kernel. Nut strongly pointed on both ends but basal point distinctively long. Thinnest shell of any walnut cultivar. Bears on lateral branches. Midseason ripening.

Stabler.—Native selection made in 1911 by Henry Stabler of Sandy Springs, Md. Medium-sized, widely ovate nut weighs 16 g and yields 31% kernel. Some nuts develop with a single lobe. Protogynous flowering. Midseason ripening. Susceptible to husk fly maggot.

Surprise.—Seedling selection made during the 1970s by Leon Falconer of Sarcoxie, Mo. Large, depressed-obovate nut weighs 19 g and yields 34% kernel. Bears on lateral branches. Midseason ripening.

Thomas.—Native selection discovered by Joseph W. Thomas of King of Prussia, Pa. First propagated in 1880. Most widely propagated

black walnut cultivar to this day. Medium-sized, oblate nut weighs 19 g and yields 24% kernel. Precocious and prolific. As tree matures, kernels do not fill as well. Susceptible to anthracnose. Trees grows vigorously but is subject to wind damage. Thomas is the standard to which all other cultivars are compared. Recommended in Nebraska, Michigan, and New York.

Tippecanoe-1.—Native selection by W.F. Beineke and patented in 1982 (USPP 4954). Original tree selected for its good timber qualities from a residential area in West Lafayette, Ind. Tree exhibits extremely rapid growth rate, fair central stem tendency, early leafing, and good stem straightness. Tree produces few to no nuts.

BLUEBERRY

Paul Lyrene
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Austin.—Rabbiteye blueberry. Orig. in Tifton, Ga., by USDA and Univ. of Georgia. Introduced in 1996. T110 (Woodard x Gardenblue) x Brightwell. Tested as T339. **Fruit:** large, light blue; scar, firmness, and flavor good. **Plant:** at Poplarville, Miss., and Tifton, Ga., it flowers and ripens about the same time as Climax. Bush upright. Yield high. Yields well and leafs out well as far south as Gainesville, Fla.

Bladen.—Highbush. Orig. in Castle Hayne, N.C., by North Carolina State Univ. Introduced in 1994. NC1171 x NC-SF-12-L. Tested as NC2055. Berry size medium, similar to Croatan. **Fruit:** dark blue; scar, firmness and flavor good. **Plant:** flowers a few days before Croatan in eastern North Carolina and ripens about the same time as Reveille and O'Neal and somewhat before Croatan. Bush upright, vigorous. Good productivity. Not completely self-fruitful and should be interplanted with another clone, such as Reveille. Resistant to cane canker. Has field tolerance to stem blight.

Chandler.—Highbush. Orig. in Weymouth, N.J., by USDA. Introduced in 1994. Darrow x M-23. Tested as G-139. **Fruit:** large, light blue. Small, dry scar; firmness and flavor good. Ripens late midseason over a long period, about 2 weeks earlier than Elliott in Oregon. **Plant:** vigorous, upright, and well-branched. Consistently produces high yields in high-chill areas where winters are not severe.

Chanticleer.—Highbush. Orig. in Hammonton, N.J., by USDA and the New Jersey Agricultural Experiment Station. Introduced in 1997. G-150 x Me-US6620. Tested as G-481. Very early ripening, 2 to 5 days earlier than Weymouth. **Fruit:** medium in size, medium to light blue, with good scar and firmness. Fruit sweet, subacid, and mild-flavored. **Plant:** upright, moderate height. Flowers slightly later than Weymouth.

Chippewa.—Based on highbush x lowbush crosses. Orig. in Elk River, Minn., by Univ. of Minnesota. Introduced in 1996. B18A (G65 x Ashworth) x US3 (Dixi x Michigan lowbush No. 1). Tested as MN393. **Fruit:** large, about the same size as Northblue. Berry firm, sweet, light blue. **Plant:** more upright than Northblue. Productive, ripens midseason. It is somewhat self-fruitful but benefits from cross-pollination.

Jubilee.—Low-chill highbush. Orig. at Poplarville, Miss., by USDA. Introduced in 1994. Sharpblue x MS160 (G132 x US75). Tested as MS351. **Fruit:** size medium; scar small; color, firmness and flavor good. **Plant:** flowers later than the earliest rabbiteye varieties at Poplarville but ripens 2 weeks earlier. Plant vigorous, upright, very productive. Should be planted with other low-chill highbush cultivars for cross-pollination.

Legacy.—Highbush. Orig. in Weymouth, N.J., by USDA and New Jersey Agr. Expt. Sta. Introduced in 1993. Elizabeth x US75 (*Vaccinium darrowi* Fla.4B x Bluecrop). Tested as G-290. **Fruit:** size medium; scar and flavor superior; firmness good; ripens late midseason, after Bluecrop. **Plant:** flowers somewhat earlier than optimum for Michigan and New Jersey. Plant vigorous and upright. Yield high. Best adapted to the warmer parts of the northern highbush production area.

Little Giant.—Hexaploid hybrid (*V. constablaei* x *V. ashei*). Orig. in Chatsworth, N.J., by USDA. Introduced in 1995. *V. constablaei* x *V. ashei* clone T65. **Fruit:** small, dark blue, with good flavor and very small picking scar. Fruit ripening is concentrated and occurs in late July to early August in northern growing areas, typically about 2 weeks later than Bluecrop. **Plant:** medium in height, about 1.5 m, and medium in productivity. Intended primarily for the processed market.

Requires cross pollination for best yields.

Magnolia.—Low-chill highbush. Orig. in Poplarville, Miss., by USDA. Introduced in 1994. FL78-15 x FL72-5. Tested as MS162. **Fruit:** size medium; scar small; color, firmness, and flavor good. Flowers later than the earliest rabbiteye varieties at Poplarville but ripens 2 weeks earlier. **Plant:** vigorous, productive, spreading; medium height. Should be planted with other southern highbush cultivars for pollination.

Misty.—Low-chill highbush. Orig. in Gainesville, Fla., by Univ. of Florida. Introduced in 1990. FL67-1 x Avonblue. Tested as FL72-1. **Fruit:** medium to large; light blue. Scar, firmness and flavor good. **Plant:** upright and vigorous. Should be interplanted with other low-chill highbush cultivars for pollination. Produces large numbers of flower buds and may require summer pruning to promote adequate spring leafing.

Nui.—Highbush. Orig. in New Zealand. Introduced in 1989. E118 (Ashworth x Earliblue) x Bluecrop. Tested as E118-12. **Fruit:** very large. Color and flavor good. Ripens with Earliblue at Moanatuatua. Yield medium, but higher than Earliblue. USPP 6699.

Ozarkblue.—Highbush. Orig. in Arkansas by Univ. of Arkansas. Introduced in 1996. USPP pending. G144 x FL64-76. Tested as A-109. **Fruit:** large, light blue; scar, firmness and flavor good. Ripens 10 days later than Bluecrop and 10 days earlier than Tifblue at Clarksville, Ark. **Plant:** vigorous, semi-upright. Consistent, high yields.

Pearl River.—Pentaploid hybrid of highbush x rabbiteye. Orig. in Poplarville, Miss., by USDA. Introduced in 1994. G-136 (highbush) x Beckyblue (rabbiteye). Tested as MS149. **Fruit:** size medium. Color dark blue; scar, firmness and flavor good. **Plant:** flowers late but ripens 1 week before Climax and Premier at Poplarville. Should be planted with low-chill highbush cultivars for pollination.

Polaris.—Highbush. Orig. in Elk River, Minn., by Univ. of Minnesota. Introduced in 1996. B15 x Bluetta. Tested as MN408. Fruit size medium; light blue; scar moderately small; very firm; excellent flavor; ripens early. **Plant:** upright, slightly smaller than Bluetta but taller and less spreading than Northblue. Reaches 1.3 m height and spread; highly self-unfruitful. Yield equal to Northblue.

Puru.—Highbush. Orig. in New Zealand. Introduced in 1989. E118 (Ashworth x Earliblue) x Bluecrop. Tested as E118-4. **Fruit:** very large; color and flavor good; ripens with Earliblue. Yield medium. USPP 6701.

Reka.—Highbush. Orig. in New Zealand. Introduced in 1989. E118 (Ashworth x Earliblue) x Bluecrop. Tested as E118-7-17. **Fruit:** size medium; ripens with Earliblue. Yield very high. USPP 6700.

Southmoon.—Low-chill highbush. Orig. in Gainesville, Fla., by Univ. of Florida. USPP 9834, rights held by Florida Foundation Seed Producers, Inc. Introduced in 1995. FL80-46 x Southern highbush. Tested as FL85-15. **Fruit:** large; color medium blue; scar, firmness and flavor good. Flowers and ripens about 10 days later than Sharpblue in north Florida. **Plant:** moderately vigorous and upright.

Star.—Low-chill highbush. Orig. in Gainesville, Fla., by Univ. of Florida USPP pending, rights held by Florida Foundation Seed Producers, Inc. Introduced in 1995. FL80-31 x O'Neal. Tested as FL87-139-S. **Fruit:** large, dark blue; scar, firmness and flavor good. Concentrated ripening season. **Plant:** moderately vigorous, upright. Flowers at the same time as Sharpblue in north Florida.

Windy.—Rabbiteye. Orig. in Gainesville, Fla., by Univ. of Florida. USPP 8083, rights held by Univ. of Florida. Introduced in 1992. Bluebelle x Florida-M. Tested as FL83-97. **Fruit:** medium size; dark blue. Scar, firmness and flavor good. Ripens 10 to 14 days before Climax in north Florida. Flowers very early in season and susceptible to blueberry gall midge. **Plant:** vigorous but spreading.

CURRENT

Hugh Daubeney

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Albatross (Witte van Huisman).—A whitecurrant with an excellent flavor. Orig. in The Netherlands by L. Huisman. Probably Red Lake x Fay's Prolific; selected in 1975; introd. in 1990. **Fruit:** moderate size; moderate number per strig; attractive pale yellow; easy

to harvest; excellent sweet flavor; early ripening. **Plant:** yield moderate to good; moderate growth; early flowering. Susceptible to leaf fall disease.

Augustus.—An easy to harvest, productive redcurrant. Orig. in The Netherlands by J. Maarse. Jonkheer van Tets x *Ribes multiflorum*; cross made in 1963; introd. in 1991. Protected by Dutch Plant Breeder's rights. **Fruit:** medium and small alternate on strig; firm; relatively dark red; easy to harvest; sour taste but becomes milder if left on plant; only slightly susceptible to rain damage; good shelf life; relatively early flowering but late ripening; suitable for production under protection. **Plant:** high yield; vigorous and erect habit; few and short side branches. Relatively resistant to leaf fall disease.

Ben Alder.—A high-yielding blackcurrant producing fruit ideal for juice extraction. Orig. in Invergowrie, Scotland, by R. Brennan and M. Anderson, Scottish Crop Res. Inst. Ben More x Ben Lomond; introd. in 1988. Marketing rights held by PBI Cambridge. **Fruit:** small size; late ripening; high anthocyanin and ascorbic acid contents; juice has high color stability; adapted to all forms of processing; suited to machine harvest. **Plant:** high yield; vigorous; late flowering with some tolerance to low temperatures at flowering. Resistant to American powdery mildew and leaf spot; susceptible to leaf curling midge and white pine blister rust.

Ben Connan.—A large-fruited blackcurrant suited for pick-your-own production. Orig. in Invergowrie, Scotland, by R. Brennan and M. Anderson, Scottish Crop Res. Inst. Ben Sarek x Ben Lomond. Introd. in 1994; marketing rights held by NSA Plants Ltd. **Fruit:** very large; hangs well when ripe; early ripening; suited to pick your own, pie fillings and yogurt; not suitable for juice; suited to machine harvest. **Plant:** high yield; compact growth habit; tolerant of low temperatures at flowering; adapted over a wide environmental range. Resistant to American powdery mildew, leaf spot and leaf-curling midge.

Ben Lomond.—A large-fruited blackcurrant widely grown for its excellent processing qualities. Orig. in Invergowrie, Scotland, by M. Anderson, Scottish Crop Res. Inst. (Consort x Magnus) x (Brodtorp x Janslunda); introd. in 1974. **Fruit:** large; excellent juice color and flavor; good for fresh use; suited to machine harvest. **Plant:** high yield; good vigor; older plants may have spreading habit; high chilling requirement. Resistant to leaf spot; some resistance to American powdery mildew but breakdown has occurred; susceptible to white pine blister rust.

Ben Nevis.—A large-fruited blackcurrant with good frost tolerance. Orig. in Invergowrie, Scotland, by M. Anderson, Scottish Crop Res. Inst. (Consort x Magnus) x (Brodtorp x Janslunda); introd. in 1974. **Fruit:** large; intensely colored juice; good color stability; suited to machine harvest; can show preharvest drop if harvest is delayed. **Plant:** vigorous, taller than Ben Lomond; flowers have good frost tolerance; high chilling requirement. Resistant to leaf spot; some resistance to American powdery mildew but breakdown has occurred; susceptible to gall mite and white pine blister rust.

Ben Sarek.—A blackcurrant with a unique compact growth habit suited for pick-your-own and home gardens. Orig. in Invergowrie, Scotland, by M. Anderson, Scottish Crop Res. Inst. (Goliath x Ojebyn) open-pollinated; introd. in 1983. **Fruit:** large fruit; soft and does not hang well on strig; early ripening; suitable for u-pick and home garden; not suitable for most juice processing. **Plant:** high yield; compact habit; tolerant to low temperatures at flowering time. Resistant to American powdery mildew, leaf spot, and white pine blister rust.

Ben Tirran.—A late-ripening blackcurrant suited to processing. Orig. in Invergowrie, Scotland, by R. Brennan and M. Anderson, Scottish Crop Res. Inst. Ben Lomond x [(Seabrook's Black x Amos Black) x (Seabrook's Black x *Ribesia* sp.)]; introd. in 1989. Marketing rights held by Smith Kline Beecham Consumer Brands. **Fruit:** medium size; late ripening; suitable for fresh and processing; suitable for machine harvest. **Plant:** consistently high yield; upright habit; late flowering and avoids frost. Resistant to American powdery mildew and leaf spot.

Blanka.—A disease and pest resistant whitecurrant. Orig. in Bojnice, Slovakia, by J. Cvopa and I. Hricovsky, Fruit Res. Breeding Inst. Heinemann's Rote Spatlese x Red Lake; tested as BO 113; introd. in 1977. **Fruit:** large; produced on long strigs; late ripening; suited to both hand and machine harvest. **Plant:** high yield; vigorous upright

growth; somewhat susceptible to American powdery mildew and leaf spot.

Bona.—A very early-ripening, large-fruited blackcurrant. Orig. in Skierniewice, Poland, by J. Gwozdecki, Res. Inst. of Pomology and Floriculture. Ojebyn x S/12 (probably *Ribes dikuscha* x Climax); cross made in 1969; tested as 92/69; introd. in 1991; Plant Variety Rights held by Res. Inst. of Pomology and Floriculture. **Fruit:** very large; early ripening; good flavor with low acid content. **Plant:** moderate yield; branches tend to bend with fruit load. Resistant to American powdery mildew; susceptible to currant rust.

Cassa.—A high-quality, large-fruited redcurrant. Orig. in The Netherlands by N.D. Klay. Selected in 1980; introd. in 1992. **Fruit:** large, uniform size; firm; glossy, bright red; hang close together on short, compact strig; good flavor but slightly sour; midseason flowering and ripening; somewhat susceptible to *Botrytis* rot but shelf life and keeping quality on bush appear good. **Plant:** good yield when there is sufficient chilling hours; relatively vigorous side branches and moderate top growth. Relatively resistant to leaf fall disease and *Verticillium* wilt.

Ceres.—A blackcurrant with field resistance to gall mite. Orig. in Skierniewice, Poland, by J. Gwozdecki, Res. Inst. of Pomology and Floriculture. Open-pollinated seedling of selection S/26 (probably *R. dikuscha* x Barchatnaja); seed obtained in 1969; tested as 76/69; introd. in 1991. Plant Variety Rights held by Res. Inst. of Pomology and Floriculture. **Fruit:** medium size; glossy; high acid and anthocyanin; low sugars and soluble solids; produced on long strigs; shows some preharvest drop-off; midseason ripening; easy to hand harvest. **Plant:** moderate yield; spreading habit. Some resistance to gall mite but susceptible to reversion virus; slightly susceptible to American powdery mildew.

Detvan.—A high-yielding, large-fruited redcurrant. Orig. in Bojnice, Slovakia, by J. Cvopa and I. Hricovsky, Fruit Res. Breeding Inst. Jonkheer van Tets x Heinemann's Rote Spatlese; introd. in 1985. **Fruit:** large; attractive; produced on long strigs; early ripening. **Plant:** high and consistent yield; vigorous; adapted to warmer regions.

Eva.—A relatively late-ripening blackcurrant. Orig. in Bojnice, Slovakia by J. Cvopa and I. Hricovsky, Fruit Res. Breeding Inst. Silvergieter's Zwart x Holandska cierna; introd. in 1988. **Fruit:** produced on long strigs. **Plant:** moderate yield; vigorous.

Farleigh.—A gall mite resistant blackcurrant. Orig. in East Malling, England, by E. Keep and V.H. Knight, Hort. Res. Intl. Complex parentage involving *Ribes bracteosum* and gooseberry; cross made in 1976; tested as EM 1611/150; released in 1994. Market rights held by NSA Plants Ltd., East Malling. **Fruit:** large; slightly soft; borne on short, crowded strigs; lacks strong blackcurrant flavor; not suitable for commercial juice production; recommended for fresh market, including pick-your-own and home gardens; ripens at same time as Ben Lomond but flowers a week earlier. **Plant:** moderate to good yield; moderate vigor and slightly spreading habit. Moderately resistant to American powdery mildew; highly resistant to gall mite, conferred by gene *Ce* from American gooseberry, thus will avoid reversion virus.

Favorit.—A large-fruited blackcurrant with resistance to low winter and spring temperatures. Orig. in Bojnice, Slovakia by J. Cvopa and E. Cvopova, Fruit Res. Breeding Inst. *Ribes dikuscha* x Topsy; cross made in 1971; tested as BO 756; introd. in 1993. **Fruit:** large; firm with thin skin; dull black color; produced on long strig; early flowering and midseason ripening; ripens uniformly; easy to harvest; high ascorbic acid. **Plant:** high yield; vigorous with compact, upright branches and long fruit laterals. Somewhat susceptible to American powdery mildew.

Fertod 1.—A high-yielding blackcurrant widely grown in Hungary. Orig. in Pozsonyi, Hungary, by A. Porpacz, Dept. of Horticulture, Pannon Agr. Anstrom x Stachanovka Altaya (derived from *Ribes dikuscha*); introd. in 1976. **Fruit:** moderately large; produced on long strigs; midseason ripening; pleasant flavor; easy to harvest. **Plant:** consistently high yield; moderate vigor. Field resistance to American powdery mildew.

Foxendown.—A gall mite and mildew-resistant blackcurrant. Orig. in East Malling, England, by E. Keep and V.H. Knight, Hort. Res. Intl. Ben Lomond x EM 1428/70 (derived from gooseberry and *Ribes glutinosum*); cross made in 1981; tested as EM 1840/121;

released in 1994. Market rights held by NSA Plants Ltd., East Malling. **Fruit:** medium size; firm; separate readily from relatively long strig; adapted to pick-your-own and home gardens; juicing quality unknown. **Plant:** moderate to good yield; vigorous; erect growth habit. Highly resistant to American powdery mildew, conferred by gene *Sph₃* from *R. glutinosum*, and to gall mite conferred by gene *Ce*, thus will avoid reversion virus; moderately resistant to leaf spot.

Hron.—A redcurrant with a high juice yield and adapted to machine harvest. Orig. in Bojnice, Slovakia, by J. Cvopa and E. Cvopova, Fruit Res. Breeding Inst. Jonkher van Tets x Heinemann Rote Spatlese; tested as BO 158. **Fruit:** medium size; firm skin; glossy red color; borne on long strig; slightly acid and aromatic; juicy; no tendency to drop; late ripening; easy to harvest. **Plant:** moderate to high yield; vigorous with strong branches; relatively upright growth habit. Appears to have disease resistances.

'Malling' Redstart.—A high-yielding, late-ripening redcurrant. Orig. in East Malling, England, by E. Keep, J.H. Parker, and V.H. Knight. Hort. Res. Intl. Red Lake x B156/34 [(*Ribes sativum* x *R. multiflorum*) x Red Lake]; tested as B608/34; introd. in 1982. Market rights held by Plant Breeding Intl. **Fruit:** medium size; produced on long strigs; acid flavor; suited to processing as jelly; late ripening. **Plant:** high yield; moderately vigorous and erect; fairly wind resistant.

Maraton.—A high-yielding redcurrant adapted to machine harvest. Orig. in Bojnice, Slovakia, by J. Cvopa and E. Cvopova, Fruit Res. Breeding Inst. Jonkher van Tets x Heinemann Rote Spatlese; tested as BO 103. **Fruit:** medium to large; thin skin, dark red; borne on long strig; slightly sour flavor; medium juicy; midseason ripening; easy to harvest. **Plant:** consistently high yield; vigorous with medium long, thick branches; semi-upright habit. Slightly susceptible to anthracnose; appears to have resistance to other diseases

Mortti.—A high-yielding, winter-hardy blackcurrant. Orig. in Piikkio, Finland, by T.P. Hietaranta and H.M. Hiirsalmi, Inst. of Hort. Ojebyn x Wellington XXX; cross made in 1967; introd. in 1989. **Fruit:** large; firm with thick skin; medium strong aroma; relatively late ripening; suited to machine harvest. **Plant:** high yield; vigorous, erect growth. Resistant to American powdery mildew.

Otelo.—A large-fruit, pest- and disease-resistant blackcurrant. Orig. in Bonice, Slovakia, by J. Cvopa and I. Hricovsky, Fruit Res. Breeding Inst. Booskoopska cierna x Silvergieter Zwarte; introd. in 1983. **Fruit:** large; produced on long strigs; midseason ripening; high quality. **Plant:** moderate yield; erect and well-shaped.

Polar.—A high-yielding blackcurrant adapted to machine harvesting. Orig. at Swedish Univ. of Agricultural Sciences, Balsgard, by V. Trajkovski. (Silvergieter's Black x Sunderbyn 11) x Nikkala X1; tested as BR 174020 6; introd. in 1992. Protected by Swedish Plant Breeder's rights. **Fruit:** large; produced on medium long strigs; ripens uniformly; easy to harvest; relatively early ripening. **Plant:** high yield; moderately vigorous, upright to slightly open habit; mature plants have high numbers of buds on laterals; early flowering but resists or avoids spring frost. Highly resistant to American powdery mildew.

Primus.—A high-yielding, fresh-market whitecurrant. Orig. in Bojnice, Slovakia, by J. Cvopa and I. Hrovsky, Fruit Res. Breeding Inst. Heinemann's Rote Spatlese x Red Lake; tested as BO 122; introd. in 1977. **Fruit:** medium-early ripening; good quality. **Plant:** high yield; very vigorous.

Redpoll.—A late-ripening, very long-strigged redcurrant. Orig. in East Malling, England, by V.H. Knight and E. Keep, Hort. Res. Intl. Red Lake x a selection derived from *Ribes longeracemosum* and *R. multiflorum*; cross made in 1973; tested as EM 1503/31; released in 1994. Market rights held by NSA Plants Ltd., East Malling. **Fruit:** medium large, even size; bright red; produced on long strig; adapted to pick-your-own; processes into a pleasant jelly; late-ripening. **Plant:** very high yield; crops regularly; vigorous and spreading habit. Moderately resistant to leaf spot; slight susceptibility to American powdery mildew.

Redwing.—A very late-ripening, high-yielding redcurrant. Orig. in East Malling, England, by V.H. Knight and E. Keep, Hort. Res. Intl. Red Lake x a selection derived from *Ribes longeracemosum* and *R. multiflorum*; cross made in 1973; tested as EM 1503/35; released in 1994. Market rights held by NSA Plants Ltd., East Malling. **Fruit:** small to medium size; bright red; easy to harvest; adapted to pick-your-

own; processes into a pleasant jelly; extremely late ripening extends fresh-market season. **Plant:** very high yield; vigorous, erect habit; relatively long strig; crop evenly distributed over bush. Highly resistant to leaf spot; slightly susceptible to American powdery mildew.

Roodneus.—A high-yielding, late-ripening redcurrant. Orig. in The Netherlands by J. Maarse. Jonkheer van Tets x *Ribes multiflorum*; cross made in 1963; introd. in 1990. Protected by Dutch Plant Breeder's rights. **Fruit:** large, uniform size; firm, glossy dark red; sour flavor but sweeter after being left on bush; easy to harvest; relatively resistant to rain damage; long shelf life; late flowering and ripening; adapted to late harvest under protection. **Plant:** high to very high yield; vigorous and spreading with horizontally growing fruit laterals. Low susceptibility to leaf fall disease.

Storklas.—A late-ripening blackcurrant with spring frost tolerance. Orig. at Swedish Univ. of Agricultural Sciences, Balsgard, by V. Trajkovski. Sunderbyn 11 x (Consort x Kajaanin Musta); tested as Ri 73013-39; introd. in 1986. Protected by Swedish Plant Breeder's rights. **Fruit:** large; ripens uniformly; late ripening. **Plant:** high yield; moderate vigor with slightly spreading habit; very late flowering. Resistant to American powdery mildew and white pine blister rust.

Tatran.—A disease and pest resistant redcurrant with a high level of winter hardiness. Orig. in Bonice, Slovakia, by J. Cvopa and I. Hricovsky, Fruit Res. Breeding Inst. Red Lake x Goppertova; introd. in 1985. **Fruit:** uniform and attractive; produced on very long strigs; late ripening. **Plant:** high yield; vigorous; winter hardy; flowers have spring frost tolerance.

Vertti.—A green-fruited blackcurrant. Orig. in Piikkio, Finland, by T.P. Hietaranta and H.M. Hiirsalmi, Inst. of Hort. Ojebyn selfed; introd. in 1989. **Fruit:** yellow-green color with possibility of reddish brown marks on skin; firm; slightly milder and less sour than typical blackcurrant flavor; suited to machine harvest. **Plant:** high yield; moderately vigorous and slightly spreading habit; winter hardy. Resistant to American powdery mildew.

Viola.—A disease- and pest-resistant blackcurrant adapted to machine harvesting. Orig. in Bojnice, Slovakia, by J. Cvopa and I. Hricovsky, Fruit Res. Breeding Inst. Silvergieters Zwarte x Holandska cierna; introd. in 1987. **Fruit:** uniform; good flavor; produced on relatively short strigs; early ripening; easy to harvest. **Plant:** moderate yield; vigorous; good shape.

Witte van Huisman.— See Albatross.

GOOSEBERRY

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Jahns Prairie.—A disease-resistant, high-quality dessert gooseberry. Orig. at the USDA-ARS National Clonal Germplasm Repository, Corvallis, Ore., by K.E. Hummer and O.L. Jahn; selected in 1984 by O.L. Jahn from a seedling population of *Ribes oxycanthoides* from Alberta; tested as RIB 139; introd. in 1996 as a joint release from USDA-ARS and Agriculture and Agri-Food Canada, Ottawa. **Fruit:** large; globose; red-pink color; ripens mid- to late July. **Plant:** high yield; upright habit with some sprawling branches; single spine less than 4 mm at some nodes; flowers mid-April to early May. Resistant to American powdery mildew; leaf spot; white pine blister rust, stem *Botrytis*, aphids, and sawflies.

'Malling' Greenfinch.—A green-fruited gooseberry adapted to both fresh and processing uses. Orig. in East Malling, England, by E. Keep J.H. Parker and V.H. Knight, Hort. Res. Intl. Careless x (Whinman's Industry x Resistentia); cross made in 1967; tested as B994/27; introd. in 1984. Plant breeders rights held by Plant Breeding Intl., Cambridge. **Fruit:** medium size; attractive green color; slightly soft; good flavor; good for fresh market and home garden; moderately suitable for canning and freezing. **Plant:** very high yield; fairly compact and erect habit; spines less prominent than Invicta. Resistant to American powdery mildew; moderately resistant to leaf spot.

'Malling' Invicta.—A high-yielding, powdery mildew-resistant gooseberry. Orig. in East Malling, England, by E. Keep, J.H. Parker, and V.H. Knight, Hort. Res. Intl. Resistentia x Whinham's Industry; cross made in 1967; tested as B995/2; introd. in 1980. Plant breeders

rights held by Plant Breeding Intl., Cambridge. **Fruit:** large; very pale green color; slightly bristly skin; some irregularity in shape; good flavor; suited to processing. **Plant:** very high yield; vigorous, spreading habit; large, numerous spines; suited to wide range of soil types; suited to various training systems. Resistant to American powdery mildew; probably resistant to natural infection from gooseberry veinbanding virus.

Pax.—A spineless, red-fruited gooseberry. Orig. in East Malling, England, by V.H. Knight and E. Keep, Hort. Res. Intl. Whinham's Industry x derivative of Captivator and Lancaster Lad; spineless character derived from *Ribes oxycanthoides*; cross made in 1979; tested as EM 1815/123; released in 1994. Plant breeders rights held jointly by Hort. Res. Intl. and NSA Plants Ltd., East Malling, Kent. **Fruit:** large; well-shaped; slightly bristly; dark red when fully ripe; moderate dessert flavor; adapted to fresh market and pick-your-own; season similar to Careless; processing quality similar in flavor and texture to Careless. **Plant:** good yield; very vigorous and spreading habit; virtually spineless. Resistant to American powdery mildew; moderately resistant to leaf spot; shows symptoms of gooseberry veinbanding virus.

GRAPE

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Autumn Royal.—Black, late-ripening table grape. Orig. in Fresno, Calif., by David W. Ramming and Ronald Tarailo, USDA Horticultural Crops Research Laboratory. Not patented. Autumn Black x C74-1; selected in 1984; tested as A97-68; introd in 1996. **Fruit:** large (6.5 g); ovoid to ellipsoidal; skin is black to purple-black with a light, waxy bloom, medium thick, medium tough and adheres to the flesh; flesh is translucent green-yellow and very firm; flavor is sweet, neutral and good; quality is best if harvested at 18% soluble solids or higher; two to four aborted seeds per berry, which are medium to small in size and slightly detectable in some years; ripens after Ribier, about the first week of October in Fresno. Cluster: large (0.5 to 1.0 kg); conical with shoulders; well-filled and compact; pedicel is medium in length with medium to poor attachment to the rachis. **Vine:** medium to slightly weak in vigor; shoots and canes are brittle and can be easily broken by hand; production is very good; should be spur pruned.

Crimson Seedless.—Red, seedless, late-ripening table grape. Orig. in Fresno, Calif., by David W. Ramming and Ronald Tarailo, USDA Horticultural Crops Research Laboratory, and Sayed A. Badr, California State Univ. Not patented. C133-199 x Emperor; selected in 1983; tested as C102-26; introd. in 1989. **Fruit:** medium (4.0 g, 20.8 mm long, 16.6 mm in diam.); cylindrical to oval; responds to gibberellic acid although rates used for Thompson Seedless cause excessive thinning and a thickened, rigid rachis and pedicel resulting in excessive shatter; ripens in early October in Fresno, slightly before Emperor; has achieved 19% soluble solids and a sugar: acid ratio of >20:1; flesh is light yellow, translucent, meaty and firm; skin is bright red with a thick, white bloom, thick, medium tough, and does not separate from the flesh; flavor is sweet and neutral; contains two aborted, soft seeds that are very small and undetectable when eaten; holds on vine well and does not crack. Cluster: well-filled to slightly compact; medium (0.5 kg, length 20 cm); conical with a shoulder. **Vine:** very vigorous on its own roots; cane pruning advisable due to low production on spurs in initial trials; can be grown where other late-ripening *V. vinifera* cultivars are grown.

DOVine.—Early-ripening raisin grape with potential to dry on the vine. Orig. in Fresno, Calif., by David W. Ramming and Ronald Tarailo, USDA Horticultural Crops Laboratory. Not patented. P79-101 x Fresno Seedless (utilizing embryo rescue techniques); selected in 1987; tested as A25-58; introd. in 1995. **Fruit:** oval to slightly rounded; medium (1.85 g fresh weight); resulting raisin weight 0.52 g and similar to Fiesta but larger than Thompson Seedless; skin is white, medium tough, medium thick, and adheres to the flesh; flavor is sweet, neutral, and good; one to two aborted seeds, which are small and undetectable; soluble solids reaches 22% by the second week of August in Fresno, allowing the canes to be cut and the fruit to dry on

the vine; fruit dried on the vine consistently produced plumper raisins compared to drying on trays; ripens 7 days before Fiesta and 14 to 17 days before Thompson Seedless. Cluster: medium to large in size and length; conical; well-filled to slightly compact. **Vine:** vigorous; canes grow upright; "T" trellis is recommended to spread fruiting canes and dense canopy; production good to high when cane pruned.

Frontenac™.—Red wine grape adapted to the midwestern United States. Orig. in Excelsior, Minn., by P.R. Hemstad, J.J. Luby, and P.R. Pierquet, Univ. of Minnesota. Not patented. Landot 4511 x Univ. of Minnesota *V. riparia* selection #89; selected in 1983; tested as MN 1047; introd. in 1995. **Fruit:** small (1.1 g); bluish-black; juice characteristics include soluble solids 21.6%, pH 3.05, acidity 16.5 g/L⁻¹; ripens 7 to 10 days after Foch, or about 20 Sept. at Excelsior; wine is of good quality with very little of the herbaceous character typical of many interspecific hybrids. Cluster: medium (130 g); somewhat loose. **Vine:** vigorous; productive with overcropping a possibility, requiring a small amount of cluster thinning in some years; open growth habit; has exhibited good disease resistance with high resistance to downy mildew and moderate resistance to powdery mildew and black rot; quite tolerant to the adverse effects of 2,4-D herbicide drift; hardy enough for consistent production in central Minnesota where winter minima reach -30 °C, and at least as hardy as Foch.

Jingkejing.—Early-ripening, seedless table grape. Orig. in Beijing, China, by Chen Zhenbang, Yang Meirong, Zhang Yingzhu, and Li Shengchen, Beijing Botanical Garden. French Blue x Black Monukka; tested as 60-34-9. **Fruit:** 2.2 g; ovoid or ellipsoid; dark purple, fragile skin; crisp flesh; medium juicy; seedless; sweet with muscat aroma when fully ripe; soluble solids of 15% to 19% and acidity of 0.58% to 0.72 %; ripens about 25 July in Beijing area. Cluster: conic; 1.39/shoot; 385 g. **Vine:** high vigor; medium disease resistance.

Jingxiu.—Early-ripening, seeded grape. Orig. in Beijing, China, by Chen Zhenbang, Yang Meirong, Zhang Yingzhu, and Li Shengchen, Beijing Botanical Garden. Pannonia x (Muscat Hamburg x Black Monukka); tested as 81-3-72. **Fruit:** 5 to 6 g; ellipsoidal; dark, purplish-red; medium-thick skin; thick, crisp flesh; sweet flavor; two to three small seeds/berry; 15% to 17.5% soluble solids; 0.46% acidity; ripens early, middle to end of July in Beijing. Cluster: 420 g; conic; 1.13/shoot. **Vine:** medium vigor; medium to high productivity; medium disease resistance.

Jingya.—Large-fruited, seeded grape. Orig. in Beijing, China, by Chen Zhenbang, Yang Meirong, Zhang Yingzhu, and Li Shengchen, Beijing Botanical Garden. Seedling of Black Olympia. **Fruit:** large (10.8 g); ellipsoidal; dark-purple skin of medium thickness and thick bloom; flesh soft or medium-soft; juicy; sweet with a bit of sour and strawberry flavor; soluble solids of 13.5% to 18%; acidity of 0.65% to 0.90%; ripens early August in Beijing area; seedless berries can be produced after gibberellic acid treatment. Cluster: 486 g; cylindrical-conic; 1.55/shoot. **Vine:** medium to slightly-high vigor; high fruiting ability; high disease resistance.

Jingyou.—Large-fruited, seeded grape. Orig. in Beijing, China, by Chen Zhenbang, Yang Meirong, Zhang Yingzhu, and Li Shengchen, Beijing Botanical Garden. Seedling of Black Olympia. **Fruit:** large (10.3 g); red-purple; nearly globose or ovoid; thick skin; crisp flesh; sweet flavor with a slight strawberry aroma; 14% to 19% soluble solids; 0.55% acidity; ripens in mid-August in Beijing area. Cluster: 580 g; conic; 1.15/shoot. **Vine:** high vigor; high disease resistance.

Jingyu.—Amber-yellow, seeded grape. Orig. in Beijing, China, by Chen Zhenbang, Yang Meirong, Zhang Yingzhu, and Li Shengchen, Beijing Botanical Garden. Italia x Queen of the Vineyards; tested as 60-36-4. **Fruit:** 6.5 g; medium thick, amber-yellow skin; ellipsoidal; thick, crisp flesh; juicy; sour-sweet flavor; one or two small seeds in most berries; 13% to 16% soluble solids; 0.48% to 0.55% acidity; ripens in early August in Beijing area. Cluster: 685 g; conic; 1.18/shoot. **Vine:** vigor medium to slightly high; medium to high productivity; downy mildew resistant with medium resistance to other diseases except for high susceptibility to anthracnose.

Jingzaojing.—Seedless table grape. Orig. in Beijing, China, by Chen Zhenbang, Yang Meirong, Zhang Yingzhu, and Li Shengchen, Beijing Botanical Garden. Queen of the Vineyards x Thompson Seedless; tested as 60-27-13. **Fruit:** 2.5 to 3.0 g; ovoid or ellipsoidal; skin is amber-yellow and thin; flesh crisp; seedless; mild sweet-sour

taste with a bit of muscat flavor when fully ripe; soluble solids of 16.4% to 20.3%; acidity 0.47% to 0.62%; ripens in late July in Beijing area. Cluster: 518 g; conic; 1.09/shoot. **Vine:** vigor is high; medium productivity; medium disease resistance.

Larson B-36.—Early-ripening, black, seedless table grape. Orig. in Thermal, Calif., by Drake Larson. USPP 9039, 10 Jan. 1995. Cross of two unnamed seedlings originated by the developer. **Fruit:** average 3.8 g, 1.5 to 1.8 cm in diam., 2.0 to 2.4 cm in length; no gibberellic acid required for berry sizing; black skin of medium thickness; flesh very firm, crisp, translucent and well attached to the skin; flavor very sweet with slight plum flavor; seedless; ripens earlier than Beauty. Cluster: loose; medium length (20 cm); 0.3 to 0.8 kg; conical. **Vine:** very vigorous; moderate productivity.

Larson D-12.—See Mariah.

Mariah (Larson D-12).—Early-ripening, black, seedless table grape. Orig. in Thermal, Calif., by Drake Larson. USPP 9040, 10 Jan. 1995. Cross of two unnamed seedlings originated by the developer. **Fruit:** average 4.8 g, 2.0 to 2.2 cm in diam., 2.0 to 2.4 cm in length; no gibberellic acid required for berry sizing; skin black to slight blue-red with medium thickness; flesh is firm, translucent and is well attached to the skin; flavor very sweet with a slight plum flavor; seedless; ripens earlier than Beauty. Cluster: well-filled; 0.4 to 0.9 kg; medium length (about 23 cm); elongated. **Vine:** very vigorous; high productivity; average resistance to leaf hoppers and thrips; good resistance to nematodes; good resistance to disease (no disease observed).

Marquis.—Midseason, white, seedless table grape. Orig. in Geneva, N.Y., by B.I. Reisch, R.M. Pool, M.H. Martens, R.C. Luce, G. Remaily, and T.J. Zabada, New York State Agr. Expt. Sta. USPP pending. Athens x Emerald Seedless; selected in 1980; tested as NY64.029.01; introd. in 1996. **Fruit:** large (3.0 to 5.0 g); spherical; amber; thick skin; very juicy, melting flesh; medium-sized seed traces that are soft; flavor mild labrusca; juice soluble solids of 14% to 19% and low acidity; ripens between 15 and 30 Sept. in Geneva; berry mass is increased by flower cluster thinning; berry cracking at the distal end of the berry may result if rainfall occurs during ripening. Cluster: large (when thinned to one cluster/shoot ranges from 270 to 441 g); shouldered; moderately loose; highly sensitive to gibberellic acid, which causes berry drop and distorted, thickened rachises; cane girdling and flower cluster thinning increase cluster compactness. **Vine:** moderately vigorous (pruning mass of 1.1 to 1.4 kg/vine on own-rooted vines); productive; moderately winter hardy with no trunk injury noted at Geneva through 1995 and at least as hardy as Himrod; little crop borne on buds other than primary; foliage and fruit moderately susceptible to powdery and downy mildew and black rot and moderately resistant to Botrytis bunch rot. Recommended for home gardens and pick-your-own plantings.

Skookum Seedless.—Early midseason, seedless, green table grape. Orig. in Summerland, B.C., by A.G. Reynolds, M.J. Bouthillier, D.A. Wardle, and L.G. Denby, Agriculture and Agri-Food Canada Research Station. Not patented. Vineland 37034 (Seneca x Golden Muscat) x Romulus; selected in 1984; tested as Summerland Selection 495; introd. in 1996. **Fruit:** green; seedless; large (>2.5 g); elliptical; nonslipskin, moderately crisp flesh; thin but slightly astringent skin; mild, fruity flavor; soluble solids average 19.6%; ripens early midseason or about 18 Sept. at Summerland. Cluster: large (>200 g); moderately well-filled; triangular and winged; attractive; slight tendency for clusters to shatter if allowed to become overripe; stores satisfactorily for 6 weeks at 2 °C with polyethylene covering and SO₂ pads. **Vine:** pruning mass averages 0.6 kg/vine; low fruitfulness has not been observed in the lowermost nodes of bearing units, but it is recommended to utilize long (five node) spurs to ensure consistent yields; winter hardiness of primary buds equal to Seyval Blanc, Verdellet, and Vidal Blanc and superior to Romulus; no foliar powdery mildew has been observed but resistances to downy mildew and phylloxera are not known. Use is solely as a table grape and is not considered suitable for jelly, juice, or wine.

Sooke Seedless.—Midseason, green, seedless table grape. Orig. in Summerland, B.C., by A.G. Reynolds, M.J. Bouthillier, D.A. Wardle, and L.G. Denby, Agriculture and Agri-Food Canada Research Station. Not patented. Vineland 37022 (Seneca x Golden Muscat) x Romulus; selected in 1984; tested as Summerland Selection 535; introd. in 1996.

Fruit: green; seedless; medium (1.5 to 1.8 g); round; nonslipskin with moderately crisp texture; skin thin but slightly astringent; flavor mildly fruity; soluble solids averages 25.3%; ripens midseason, about 21 Sept. in Summerland. Cluster: medium-large (>200 g); well-filled; triangular and winged; storage performance after six weeks at 2 °C using polyethylene covering and SO₂ pads was excellent. **Vine:** pruning mass averages 1.1 kg/vine; low fruitfulness has not been observed in the lowermost nodes of bearing units but it is recommended to utilize long (five node) spurs to ensure consistent yields; winter hardiness of primary buds equal to Seyval Blanc, Verdellet, and Vidal Blanc and superior to Romulus; no foliar powdery mildew has been observed but resistances to downy mildew and phylloxera are not known. Use is solely as a table grape and is not considered suitable for jelly, juice, or wine.

Traminette.—Hardy, Gewürztraminer-character wine grape. Orig. from a cross made in 1965 by H.C. Barrett at the Univ. of Illinois and developed by B.I. Reisch, R.M. Pool, T. Henick-Kling, B.K. Gavitt, J.P. Watson, M.H. Martens, R.S. Luce, and H.C. Barrett, New York State Agr. Expt. Sta., Geneva, N.Y. Joannes Seyve 23.416 x Gewürztraminer; selected in 1974; tested as NY65.533.13; introd. in 1996. **Fruit:** amber; medium (1.5 g); spherical; average soluble solids of 20.1%, total acidity of 10.1 g·L⁻¹ and pH of 2.96; wine described as distinctively spicy and fragrant, much like Gewürztraminer, and can be finished dry or semi-dry; ripens late midseason, between 1 and 15 Oct. at Geneva. Cluster: medium (110 to 130 g); shouldered; moderately loose; average 1.7/shoot. **Vine:** productive; moderately vigorous (0.6 kg/vine average pruning mass); moderately hardy at Geneva with occasional trunk injury, especially on heavier soils, and is considerably harder than Gewürztraminer and about as hardy as Seyval and Cayuga White; foliage and fruit are moderately resistant to powdery mildew, black rot and Botrytis bunch rot, and foliage is susceptible to downy mildew; Rupestris stem pitting virus has been found to occur in vines of Traminette but it is not known if the infection has a negative effect on vine growth. Use is as a hardy and more disease resistant alternative to Gewürztraminer.

GRAPE ROOTSTOCKS

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Borner.—Phylloxera-resistant rootstock. Orig. in Geisenheim, Germany, by Ernst H. Rühl. USPP 9575; 11 June 1996. 183 Geisenheim (*Vitis riparia*) x *V. cinerea*; tested as Na 5153-54. **Vine:** high resistance to Phylloxera; tolerance against transmission of grapevine fanleaf virus by nematode vectors; rooting and grafting ability similar to that of the *V. berlandieri* x *V. riparia* group and has good graft compatibility on *V. vinifera* varieties tested; ampelographic similarities to *V. cinerea*; resistant to powdery and downy mildew and Botrytis bunch rot; grafted vines on Borner show similar vigor as those grafted on SO4, 5C, 5BB, and 125AA; showed higher drought tolerance compared to other rootstocks; adapted to most soils but moderate adaptation to alkaline soils.

HICKORY

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Somerville, Texas

Abbott Thinsell (Highway 30).—*Carya x brownii* seedling selection from homesite of A.N. Abbott, near Fulton, Ill., discovered in 1988 by Gerhart Kopf. One of two isolated *Carya x brownii* trees (the other called 'Abbott Hican'), possibly planted around 1920 from unknown seed source. **Fruit:** shucks thin, winged only at apex; nut ovate elliptic with acuminate apex and obtuse, asymmetric base; round to laterally compressed in cross section; brownish red stripes on shell at apex; 92 nuts/lb, 61% kernel; kernels convoluted, very deeply divided (almost to middle) by secondary septum, with deep, narrow dorsal grooves, and secondary dorsal grooves; kernels not astringent.

Buds: sulfur yellow. Sheds pollen in early June, matures fruit in about 90 days (late August to mid-September) in northwest Illinois. This tree may represent the combination of some of the northernmost native pecan germplasm with the hickory (*C. cordiformis*) having the northernmost distribution. As such, it is potentially useful in breeding pecans for the northern U.S.

Highway 30.—See Abbott Thinsell.

Vernon.—See Wilson.

Wilson (Vernon).—*Carya × nussbaumerii* seedling found in mid 1970s by Jim Wilson, Nevada, Mo. The original tree, located 12 miles N of Nevada, Mo., on an upland creek, among pecan trees, is thought to be from a pecan nut pollinated by shellbark hickory. The nearest hickory is over half a mile away. Widely propagated by Gilbert McDowell under the name 'Vernon'. **Fruit:** shucks to 5 mm wide, very slightly winged at sutures; nut ovate elliptic with acuminate apex and obtuse, asymmetric base; laterally compressed in cross section; prominently ribbed along suture, grooved above and below suture; brownish red stripes on shell to base; 46 nuts/lb, 48% kernel; kernels with wide dorsal grooves; wide deep secondary grooves sometimes trapping shell; very deep, wide basal cleft. Vigorous growth; leaves dark shiny green; leaflets 7–9, terminal three the largest.

PEACH ROOTSTOCKS

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Adesoto 101.—Plum rootstock graft compatible with peach and nectarine, almond, apricot, European plum and prune and Asian plum. Orig. by M.A. Moreno, M.C. Tabuenca, and R. Cambra, Est. Exp. Aula Dei (CSIC), Zaragoza, Spain. Selected from open-pollinated population of Pollizo de Murcia (*P. insititia* L.). Tested as Puebla de Soto AD 101. Roots easily by hardwood cuttings. As rootstock, produces trees with less vigor than those on peach seedlings or Damas GF1869. Cropping efficiency and fruit size are higher or similar to that of trees on peach seedlings or Damas GF1869. Adesoto 101 advances fruit maturity of peach cultivars by 3 to 7 days compared to trees on peach seedlings or peach × almond hybrids. Adapted to heavy and calcareous soils. Resistant to iron chlorosis and root asphyxia. Resistant to *Meloidogyne arenaria*, *M. incognita*, and *M. javanica*. **Tree:** when unbudded is semi-upright growth habit, slightly more vigorous than St. Julien A. One-year-old shoots are green in spring and summer and gray and purplish-red in winter. Leaves: European plum type, large, deep green, with wavy serrated margin. Typically with two glands at the base of the leaf blade. Flowers: white, similar in size to those of Reine Claude GF1380. **Fruit:** rounded, slightly asymmetric and similar in size to those of Reine Claude GF1380. Skin is blue-violet, almost black when ripe with abundant bloom. Fruit flesh is yellow-greenish or golden. Pit: similar in size to that of St. Julien A and semi-clingstone. Reference: Moreno et al., 1995. HortScience 30:1314–1315.

Atlas.—An interspecific hybrid compatible with peach and almond cultivars. Orig. by C.F. Zaiger, G.N. Zaiger, L.M. Gardner, and G.G. Zaiger of Zaiger Genetics, Modesto, Calif. Selected from a cross of Nemaguard peach and 14H528 (Jordanolo almond × *P. blireiana*). Easily propagated by hardwood cuttings. As a rootstock Atlas can be budded earlier in the nursery than can Nemaguard seedlings. Mature trees on Atlas are ≈25% larger and have delayed (3 to 4 days) fruit maturity, larger yields and fruit size compared to those on Nemaguard seedlings. **Tree:** when unbudded is vigorous, upright growth habit with light brown branches. Leaves: large, smooth, green to dark green upper surface with a green to grayish green lower surface, crenate margin, with several reniform glands at base of leaf blade. Flowers: pink, nonshowy, pollen present. **Fruit:** globose, medium size (57 to 63 mm in diam.), white fleshed. Skin is pale yellow and pubescent. Pit: clingstone. USPP 8913 (27 Sept. 1994)

Viking.—Peach trees on Viking are about 25% larger than those on Nemaguard with improved early yield and fruit size. Described under Almond Rootstocks.

PEAR—EUROPEAN

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Arganche (Mustafabey, Klementinka, Zaharoasa de Vara).—A small, early-ripening pear from Macedonia. Introduced to United States from Belgrade, Yugoslavia, in 1960 (PI 264694). **Fruit:** small (about 50 g) like Seckel, pyriform, skin yellow with red blush and no russet; flesh fine-textured, sweet, juicy, firm; ripens early, about July 16 in western Oregon. **Tree:** naturally compact due to relatively short internodes, abundant fruiting spurs, consistently productive, resistant to scab. Apparently identical to Mustafabey from Turkey, Zaharoasa de Vara from Romania, and Klementinka from Bulgaria.

Columbia Red Anjou.—A long-storing red sport of Beurre d'Anjou. Orig. near Hood River, Ore., in 1976 by Eugene C. Euwer. USPP 6194, issued 7 June 1988 to Eugene C. Euwer. Discovered as a sport in the top of a 60-year-old Beurre d'Anjou tree. **Fruit:** similar to standard Anjou except skin is overall bright red; lower rate of respiration and ethylene production result in longer storage and shelf life than standard Anjou; higher titratable acids and soluble solids than standard Anjou and Gebhard Red Anjou. **Tree:** size, shape and growth characteristics same as parent; leaves, bark and flower petals darker than parent Anjou.

Delbard Precoc.—An early-ripening pear orig. by George Delbard Nurseries, Malicorne-Commentry, France, in 1958. Released in 1975. Open-pollinated seedling of Max Red Bartlett. **Fruit:** long conic, uniform; size medium, about 140 g; skin yellow, slightly marbled with russet; flesh fine, melting, juicy, tart; similar in appearance and maturity with Dr. Jules Guyot, about 15 days before Bartlett. **Tree:** vigorous, branching habit similar to Bartlett; bloom mid-late, pollinated by Bartlett, Conference, Dr. Jules Guyot, Beurre Hardy.

Delbard Premiere.—A very early-ripening pear orig. by George Delbard Nurseries, Malicorne-Commentry, France, in 1955. Released in 1975. Akca × Dr. Jules Guyot. **Fruit:** conic-round, uniform; size medium, about 140 g; 65 mm diam.; skin green, becoming yellow when ripe; flesh crisp, juicy, sweet; mature in early July about 20 days before Dr. Jules Guyot, about 35 days before Bartlett; keeps about 30 days in cold storage. **Tree:** vigorous, medium branching, spreading; bloom early and abundant, pollinated by Conference, Bartlett; regular cropping, requires early thinning for good fruit size.

De Zahar.—See Zaharoasa de Vara

Etrusca.—A very early-ripening pear orig. at the Univ. of Florence, Florence, Italy, by Elvio Bellini. Coscia × Gentile. Cross made in 1971. Evaluated as selection FI-71.PC.526. Released and patented in 1992. Italian patent number 186/NV/92. **Fruit:** large, elongate, very regular, attractive; skin green with 30% to 40% red blush; flesh firm, white, fine texture, resistant to core breakdown; matures early July in Florence, with Delbard Premiere, about 37 days before Bartlett. **Tree:** vigorous on pear seedling rootstock, compatible with quince, abundant bloom, good fruit set, self-incompatible.

Klementinka (Arganche).—A small, early-ripening pear from Bulgaria. Local Bulgarian variety of unknown parentage, imported to United States from Kustendil, Bulgaria, in 1974 (PI 392320). One of the parents of Ubileen Gift. Apparently identical to Arganche from Macedonia and Mustafabey from Turkey. See **Arganche** for description.

Mustafabey (Mustabey, Mustabey).—A small, early-ripening pear from Turkey. Introduced into United States in 1960 from Belgrade, Yugoslavia, as "Mustabey" (PI 264697), from the Instituto di Frutticoltura in Rome, Italy, in 1967 as "Musta Bey" (PI 324134), and collected in Macedonia by T. van der Zwet in 1978 as "Mustabey" (PI 483388). The name apparently refers to its origin in the garden of a man named Mustafa. Identical to Arganche from Macedonia and Zaharoasa de Vara from Romania. See **Arganche** for description.

Para de Zahar.—See Zaharoasa de Vara.

Sakarnaia.—See Zaharoasa de Vara.

Ubileen Gift.—A large fruited, early-ripening pear from Bulgaria. Orig. Institute for Fruit Growing, Kustendil, Bulgaria, by Vasil Georgiev in 1957. Released in 1984, introduced into the United States in 1974 (PI 392323). Clapp Favorite × Klementinka. **Fruit:** large to very large

(about 230 g), pyriform, ripening in late July; skin yellow with red blush; flesh yellow, fine textured, buttery, sweet, juicy, subacid and aromatic; can be stored for 4 to 6 days at room temperature. Similar to Butirra Precoce Morettini in appearance and ripening season. **Tree:** large, vigorous, resistant to scab.

Zaharoasa de Vara (*Sakarnaia* in Russia, *Para de Zahar* or *De Zahar* in Romania).—A small, early-ripening pear from Romania. Introduced by L.F. Hough to United States in 1970 (PI 352661). Orig. possibly in Ukraine. Name refers to the sweet, early-season fruit (zahar = sugar, vara = summer); apparently identical to Arganche from Macedonia, and Mustafabey from Turkey. See **Arganche** for description.

PEAR—ASIAN

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Hougetsu.—A late-ripening, highly productive, russeted Japanese pear with good resistance to black spot disease (*Alternaria alternata* pv. *kikuchiana*). Orig. at the Fruit Tree Research Station, MAFF, in Hiratsuka, Kanagawa, Japan, by K. Kotobuki, Y. Sato, K. Abe, T. Saito, M. Omura, I. Kajiura, T. Ogata, T. Kozono, K. Seike, Y. Machida, A. Kurihara, and I. Shimura. Okusankichi x 75-23 [Nijisseiki x Ri-14 (Kikusui x Yakumo)]. Cross made in 1974, first fruited in 1981, selected in 1982. Tested as Tsukuba No. 40. Named and released in Japan in 1992 under registration number 16. USPP 9179 issued 27 June 1995. **Fruit:** large (600 g), round (108 mm in diam. 92 mm in height), similar size and shape to Okusankichi; skin yellow-reddish-brown; deciduous calyx, thick peduncle about 3.7 cm long; flesh white, soft and crisp, sweet (about 11.7% sugar) similar to Kosui and Hosui, moderate acidity (pH about 4.4), more acid than Hosui, less than Okusankichi, no astringency, no aromatic flavor; late ripening about 2 weeks before Okusankichi; keeps about 20 days at 25 °C. **Tree:** Vigorous, open, low pruning requirement, late flowering with Okusankichi, highly resistant to black spot disease and pear necrotic spot virus. Suitable pollinators include Kosui, Shinsei, Niitake.

PECAN

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Barton.—Orig. by controlled cross (Moore X Success) made by L.D. Romberg, USDA—ARS, Brownwood, Texas. Cross made in 1937 in the orchard of John Barton, Sr., of Utley, Texas. Seedling recorded as 37-3-20; first fruited in 1944; tested as T-15, released in 1953. **Nut:** elliptic with obtuse apex and acute base; round in cross section; shell suture usually dark at base; 48 nuts/lb, 57% kernel; kernels golden in color, with deep secondary dorsal and ventral grooves. **Tree:** late to break buds in spring, with Stuart. Protandrous, with midseason pollen shed and mid- to late-season receptivity. Precocious and prolific, with a tendency to overbear with maturity. Ripens early midseason. Resistant to scab. Recommended (1990) for homeowner plantings in Mississippi.

Bester.— See Moore.

Best's Early.—A native selection from the Mississippi River valley orig. in Eldred, Greene County, Ill., by Richard B. Best. Introduced in 1978 by R.D. Campbell. **Nut:** oblong with acute apex and base; round in cross section; few markings on shell; 203 nuts/lb; 39% kernel. **Tree:** weak crotches. Early harvest.

Burkett Native.—Selection made by J.H. Burkett from Battle Fish Creek, near Putnam, Callahan County, Texas. Discovered 1900, first propagated 1901. Introduced 1911. **Nut:** orbicular, with obtuse apex and rounded base; round in cross section; 43 nuts/lb, 55% kernel; kernel golden to light brown in color with prominent dark brown speckles. **Tree:** protogynous, with midseason pollen shed and receptivity. Ripens late midseason. Very susceptible to scab and downy spot (*Mycosphaerella caryigena* Demaree and Cole). Prone to preharvest germination. Widely used as a nursery seedstock for the western pecan growing region. Female parent of 'Apache' and 'Comanche'.

Candy.—Orig. as chance seedling on property of W.B. Schmidt, Ocean Springs, Jackson County, Miss. Introduced by T. Bechtel in 1913. **Nut:** oval, with obtuse apex and base; round in cross section; 66 nuts/lb, 48% kernel; kernels golden in color, smooth textured, with wide dorsal grooves; excellent shelling quality. Initiates growth early. **Tree:** protogynous, with midseason pollen shed and receptivity. Bears at 5 to 6 years, prolific, ripens early. Resistant to scab. Recommended (1990) for planting in Arkansas, Louisiana, and Mississippi.

Castanera.—See Stuart.

Chetopa (KS112).—Orig. as native seedling growing at the Kansas Agr. Expt. Field, Chetopa. Discovered by F. Brewster, former land owner and identified as tree #112. After donation of land to Kansas State Univ., the tree was known as KS112. Introduced by William Reid in 1995. **Nut:** oblong, with acute apex and obtuse base; flattened in cross section; 69 nuts/lb, 54% kernel; narrow dorsal grooves, thick. **Tree:** protogynous, with late pollen shed and early to midseason receptivity. Resistant to scab. Moderately precocious, with regular production. Ripens with Giles, 10–14 Oct. in Chetopa. Good branch angles.

Creek.—Released for its precocity, productivity, and disease resistance for use as a temporary cultivar in the early establishment phase of orchards in the southeast. Orig. from a controlled cross (Mohawk x Starking Hardy Giant) made in Brownwood, Texas, by L.D. Romberg. Cross made in 1961. Tested as 61-6-67 by T.E. Thompson, W.D. Goff, M.L. Nesbitt, R.E. Worley, R.D. O'Barr, and B.W. Wood and released in 1996. **Nut:** elliptical, with an acute apex and base; round in cross section; 54 nuts/lb, 49% kernel; kernels cream to golden in color, with wide dorsal grooves. **Tree:** mature trees tend to overbear. Protandrous, with midseason pollen shed and mid- to late-season pistillate receptivity. Moderately scab resistant. Highly susceptible to pecan phylloxera (*Phylloxera devastatrix* Pergande).

Curtis.—Seedling selection grown from seed of Turkey Egg obtained from Arthur Brown, Bagdad, Fla., and planted by J.B. Curtis, Orange Heights, Fla. Nut was planted 1886, bore first crop in 1893 and introduced in 1896. **Nut:** oblong elliptic with acute apex and base; slightly compressed in cross section; shell with few markings; 89 nuts/lb, 57% kernel; kernels cream to golden in color, but often with darker speckles that detract from appearance; tight dorsal grooves. **Tree:** protogynous, with late-season pollen and midseason pistillate receptivity. Resistant to scab. Susceptible to powdery mildew (*Microsphaera alni* de Candolle ex Winter). Used as a nursery seedstock in the southeastern U.S. Male parent of Houma. Curtis has a unique isozyme genotype: *bc* for phosphoglucosyltransferase. Recommended (1990) for homeowner plantings in Florida, Georgia, and Louisiana.

Delmas (Nellie).—Seedling selection from orchard of A.G. Delmas, planted about 1877 in Scranton, Jackson County, Miss. Tree began bearing in 1884, was named in 1885, and was introduced commercially in 1890. **Nut:** elliptic, with obtuse apex and base; round in cross section; prominent ridges on shell, which is smooth, with few stripes; 50 nuts/lb, 48% kernel; kernels golden, with wide dorsal grooves; wrinkled on ventral surface. **Tree:** protogynous with mid- to late-season pollen shed and midseason pistillate receptivity. Susceptible to scab. A prominent cultivar in Israel. Known as Nellie in Australia.

Desirable.—Orig. by controlled cross (unknown parents) made by C. Forkert, Ocean Springs, Jackson County, Miss. Parentage of Forkert's first introduction, Dependable, was Jewett x Success. Similarity in appearance led to speculation that Desirable is a sibling. Another controlled cross by Forkert, Admirable, was Russell x Success. That parentage has also been suggested for Desirable. Isozyme analysis is consistent with Russell x Success parentage, while the genotype of Jewett remains undetermined. Cross made in 1903. Introduced by Forkert as Desirable in 1914, but not widely distributed until after Forkert's death in 1928, when USDA—ARS, Philema, Ga., tested it as #7191, beginning about 1930. Identified by USDA as Forkert's Desirable in 1936. **Nut:** elliptic with obtuse apex and obtuse to rounded base; round in cross section; shell rough, with elevated suture; 38 nuts/lb, 54% kernel; kernels golden in color, with wide dorsal grooves. **Tree:** protandrous, with abundant early pollen shed and mid- to late-season pistillate receptivity. Bears in about 6 years and makes consistent, moderate production of high-quality nuts, due in part to self-thinning fruit drop that reduces the number of nuts per cluster. Ripens in late midseason, shortly after Stuart. Susceptible to

scab. Recommended for use in commercial orchards from Georgia west to Texas. Recommended (1990) for planting in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas.

Devore.—Seedling selection made by R.B. Best, from Wapello, Louisa County, Iowa. Introduced in 1978. **Nut:** elliptic with obtuse apex and acute base; oval in cross section; 143 nuts/lb, 43% kernel; kernels golden in color, with shallow dorsal grooves and deep basal cleft. Very early nut maturity. Evaluated for production in the far north.

Duminie Mire.— See Van Deman.

Forkert.—Orig. from a controlled cross (Success? x Schley) made by C. Forkert of Ocean Springs, Jackson County, Miss. Nuts from the cross were planted about 1913. Introduced by Forkert's Nursery in the 1920s and used as a yard tree in south Mississippi. Potential as commercial cultivar rediscovered in the 1960s. **Nut:** oblong elliptic with acuminate apex and obtuse base, surface very rough, with prominent dark stripes; round in cross section; 49 nuts/lb, 62% kernel; kernels cream to golden in color, with deep, relatively narrow dorsal grooves. **Tree:** protogynous, with mid- to late-season pollen and early pistillate receptivity. Susceptible to scab in Louisiana. Recommended (1990) in Alabama, Arkansas, Louisiana, Mississippi, and South Carolina.

Frotscher.—Seedling selection made by Oscar Olivier from Bayou Teche, near Olivier, Iberia Parish, La. Seed was planted prior to the Civil War. First propagated by William Nelson in 1882. **Nut:** oblong elliptic, with obtuse apex and rounded base; flattened in cross section; 57 nuts/lb, 49% kernel; kernels golden in color, with darker veins; kernels wrinkled in texture, with wide dorsal grooves and a prominent basal cleft. **Tree:** protogynous, with mid- to late-season pollen shed and early pistillate receptivity. Good resistance to scab and downy spot, but susceptible to vein spot (*Gnomonia nerviseda* Cole).

Gloria Grande.—Orig. as seedling selection (possibly from Stuart seed) growing in Ellore, S.C., discovered in 1920 by W.W. Watson, Watson's Pecanwood Nurseries, Orangeburg, S.C. Introduced in 1923. **Nut:** elliptic with obtuse often asymmetric apex and obtuse to rounded base; round in cross section; shell thick, smooth, darkly striped; 44 nuts/lb, 48% kernel; kernels golden, with shallow, wide dorsal grooves and a deep basal cleft. **Tree:** protogynous with mid- to late-season pollen shed and early to midseason pistillate receptivity. Not precocious. Resistant to scab, fungal leaf scorch and downy spot. Susceptible to black pecan aphids. Recommended for use by homeowners in Alabama, Arkansas, Georgia, Louisiana, and South Carolina. Recommended for commercial growers in Alabama, Arkansas, Florida, and South Carolina.

Greenriver.—Native selection made from woods on the L.B. Major farm, at the mouth of the Green River near Henderson, Henderson County, Ky. Other selections from the same woods include Major and Hinton. Introduced by T.P. Littlepage in 1911. **Nut:** oval elliptic with obtuse apex and base; laterally compressed in cross section; ridges on shell; 70 nuts/lb, 49% kernel; kernels golden in color, with wide dorsal grooves and deep, wide basal cleft. **Tree:** protogynous, with midseason pollen shed and early pistillate receptivity. Not appropriate for the far north, due to late nut maturity. Scab resistant in north. Greenriver has a unique isozyme genotype: *cc* for phosphoglucose isomerase. Recommended (1990) in Arkansas, Kentucky, and Tennessee.

Johnson.—Native seedling discovered by Charles Stephens, Columbus, Kans., in 1931. **Nut:** oblong, with acuminate apex and base, round in cross section; 84 nuts/lb, 47% kernel; kernels with tight dorsal grooves. **Tree:** protogynous. Early nut maturity.

Jubilee.—Orig. as chance seedling of unknown parentage selected by Melvin B. Clemons, Foley, Ala. USPP 5485; issued 4 June 1985. **Nut:** oblong with acute apex and base; round in cross section; 45 nuts/lb, 53% kernel; kernels golden in color, with deep, tight dorsal grooves, secondary dorsal grooves, deep basal cleft, deep ventral and secondary ventral grooves. **Tree:** protogynous. Precocious and prolific. Resistant to scab. Recommended (1990) for trial plantings in AL.

Kallus.— See Prilop of Lavaca.

Kanza.—Released for its ability to produce good yields of high-quality nuts in the northern pecan producing regions (Zone 6b). Orig. from a controlled cross (Major x Shoshoni) made in Brownwood,

Texas, by L.D. Romberg. Cross made in 1955. Tested as 55-11-11 by T.E. Thompson, L.J. Grauke, Wm. Reid, M.W. Smith, and S.R. Winter and released in 1996. **Nut:** ovate, with an acute apex and obtuse to rounded base; round in cross section; 77 nuts/lb, 54% kernel; kernels golden in color, with dorsal grooves that do not trap packing material. **Tree:** protogynous, with late pollen shed and early pistillate receptivity. Kanza has excellent scab resistance.

KS112.— See Chetopa.

Major.—Native seedling discovered about 1907 by Mrs. L.B. Major, from woods on the Major farm near the confluence of the Green and Ohio Rivers, Henderson County, Ky. Introduced in 1908. **Nut:** oval elliptic to orbicular, with obtuse apex and base; few stripes, abundant spots, and ridges on the shell surface; 78 nuts/lb, 49% kernel; kernels cream to golden in color, with broad, shallow dorsal grooves. **Tree:** protandrous, with midseason pollen shed and midseason pistillate receptivity. Good resistance to scab, but susceptible to vein spot. A standard cultivar for the northern pecan region of the U.S. Female parent of Osage and Kanza. Recommended (1990) for planting in Arkansas, Kansas, Kentucky, Missouri, and Tennessee.

McLeon.—Seedling selection grown from open-pollinated Moore seedstock planted in 1961 by Gilbert McDowell, Nevada, Mo. Seedling began to bear in 1972, was first propagated in 1974, and received USPP 5911 24 March 1987. **Nut:** oblong elliptic with acute apex and obtuse base; 55 nuts/lb, 55% to 60% kernel. **Tree:** leaves are larger and lighter green in color than Stark Hardy Paper Shell. Late nut maturity (1 Nov. at Nevada, Mo.).

Moore (Bester).—Seedling selection owned by Miss Annie Wooten of Waukeenah, Jefferson County, Fla. Introduced in 1908. Known as Bester in South Africa. **Nut:** oval elliptic to oblong elliptic with obtuse apex and base; slightly flattened to round in cross section; 67 nuts/lb, 49% kernel; kernels golden to light brown, with tight dorsal grooves and a narrow dorsal ridge. **Tree:** protandrous, with early pollen and midseason pistillate receptivity. Precocious, becoming an alternate bearer with maturity. Moore and its sibling Waukeenah have been used as seedstocks by the pecan nursery industry, primarily in the southeastern pecan region of the U.S. Moore is the female parent of Barton and of Selection 48-13-311 (the female parent of Navaho). Recommended (1990) for planting in AR.

Moneymaker.—Seedling selection by S.H. James, Mound, La., from an orchard planted about 1885 using nuts purchased in New Orleans. The nuts supposedly were collected from South Louisiana, between New Orleans and the Texas border. Named in 1896 and commercially propagated in 1898. **Nut:** oval elliptic with oblique rounded apex and rounded base; round in cross section; 62 nuts/lb, 50% kernel; kernels light brown in color with shallow dorsal grooves, prominent secondary dorsal grooves, and wrinkled texture. **Tree:** protogynous, with midseason pollen and early pistillate receptivity. Precocious and prolific. Trees have strong structure, due to good limb angles. Resistant to scab. Early nut maturity. Substantial acreage in Georgia and Alabama. Recommended (1990) for planting in Arkansas.

Navaho.—Orig. from a controlled cross [48-13-311 (=Moore x Schley) x Wichita] made in Brownwood, Texas, by E.J. Brown and G.D. Madden in 1974. Tested as 74-1-11 by T.E. Thompson, L.J. Grauke, and J.B. Storey and released in 1994. **Nut:** oblong elliptic with an acuminate apex and obtuse base; round in cross section; 62 nuts/lb, 61% kernel; kernels golden to light brown in color, with deep, relatively narrow dorsal grooves and a prominent basal cleft. **Tree:** protandrous, with early pollen shed and midseason pistillate receptivity. Susceptible to scab and vein spot. Trees are vigorous with strong structure, and begin growth early in the spring. Very precocious and prolific. Nut maturity mid-October in College Station, Texas.

Nellie.— See Delmas.

Nugget.—Native selection from the Leon River near Gustine, Comanche County, Texas, discovered by J.A. Evans in the early 1930s. **Nut:** oval elliptic with acute apex and base; 86 nuts/lb, 57% kernel; kernels with very shallow dorsal grooves. **Tree:** protogynous. Susceptible to scab. Consistent in production. Unusual in having *d* allele for malate dehydrogenase, as does its progeny Sullivan.

Paragon.— See Van Deman.

Pensacola Cluster.—Orig. as chance seedling in Pensacola, Fla.,

discovered by E.W. Moring in 1958. Introduced in 1960. USPP 2099, issued 31 Oct. 1961, assigned to Simpson Nursery Co., Monticello, Fla. **Nut:** oblong with obtuse apex and base; round in cross section; resembles Van Deman; 32 nuts/lb. **Tree:** protogynous, with late pollen shed and midseason receptivity. Nuts borne in clusters of six to 10. Nuts mature in early October. Very susceptible to scab in Louisiana.

Posey.—Native selection from Gibson County, Ind., introduced in 1911 by W.C. Reed. **Nut:** oval elliptic with an acute apex and obtuse base; laterally compressed in cross section with raised suture; 63 nuts/lb, 54% kernel; kernels light brown in color, with prominent secondary dorsal grooves. **Tree:** protogynous bloom pattern. Late to break buds in the spring. Resistant to scab. Early nut maturation. Recommended (1990) for planting in Kansas, Kentucky, Missouri, and Tennessee.

Price-Fleming.—Seedling selection of unknown parentage discovered in the 1950s by J.W. Price on his property in North Central Nash County, N.C. USPP 7228; issued 15 May 1990. **Nut:** oblong elliptic with obtuse apex and base; asymmetric; 44 nuts/lb, 55% kernel; kernels cream to golden in color. Resistant to scab.

Prilop of Lavaca (Steffek, Kallus).—Native selection from the Lavaca River, originally growing 2½ miles south of Hallettsville, in Lavaca County, Texas. The original tree grew near a river crossing, on land owned by G. W. Prilop, and was called Prilop by the first grafters. The cultivar is also called Steffek due to the work of F.T. Steffek in propagating the tree. Steffek collected graftwood from the ortet and propagated an orchard in 1939, prior to the destruction of the original tree due to a flood in 1940. The cultivar has also been called Kallus, after Louis Kallus, Sr., an early proponent of the cultivar who sent wood to the USDA-ARS Pecan Station in 1976. **Nut:** oblong with acute apex and obtuse base; round in cross section; shell smooth, with few markings; 78 nuts/lb, 57% kernel; kernels golden, with very thin dorsal ridge, especially at apex. **Tree:** protandrous. Resistant to scab. Texas State Champion Native in 1991. One of the most widely propagated Texas natives in recent times, with over 3000 acres in Lavaca County.

Salopek.—Orig. by controlled cross of Wichita and Onliwon, made by R.M. Nakayama, New Mexico State Univ., Las Cruces. Cross made in early 1970s, tested as W-03 by Esteban Herrera. Released by Agr. Expt. Sta. of New Mexico State Univ. in 1994. **Nut:** oblong, with acute apex and obtuse base; oval in cross section; 55 nuts/lb, 60% kernel; kernels cream in color. Dorsal grooves do not retain packing tissue when cracked. **Tree:** protogynous.

San Saba.—Native selection from the San Saba River, San Saba County, Texas, made by E.E. Risien in 1882. Tree discovered when nuts were entered in a contest sponsored by Risien in an effort to find valuable trees. Risien purchased the land to obtain the tree and found the top had been cut out to harvest the crop. Introduced by Risien in 1893. Nuts from this tree were planted in 1895 by Risien to form his orchard, from which were selected San Saba Improved, Texas Prolific, Onliwon, Jersey and Texas 60. Western Schley was once thought to be a progeny of San Saba, but could not be based on genotypes for malate dehydrogenase and leucine aminopeptidase. **Nut:** oval to orbicular, with obtuse apex and obtuse to rounded base; round in cross section; 103 nuts/lb, 64% kernel; kernels golden to light brown in color, with wide dorsal grooves and prominent secondary dorsal grooves. **Tree:** protandrous. Susceptible to scab.

San Saba Improved.—Seedling selection grown from seed of San Saba planted by E. E. Risien, in his orchard on the San Saba River, San Saba County, Texas. Introduced 1912. **Nut:** oblong elliptic with acute apex and obtuse base; asymmetric; prominent dark stripes on shell apex; round in cross section; 61 nuts/lb, 59% kernel; kernels golden to light brown in color, with dorsal ridge pinched at apex and flared at base above a prominent basal cleft. **Tree:** protandrous with early pollen shed and midseason pistillate receptivity. Susceptible to scab.

Schley.—Seedling selection from nut planted about 1881 by A.G. Delmas, at Scranton, Jackson County, Miss. Once thought to be from Stuart seed, but isozymes belie that relationship (Schley has *aa* genotype for phosphoglucose isomerase, and *bb* for malate dehydrogenase, while Stuart is *bb* for the former and *ac* for the latter). Named by Delmas in 1898 in honor of Admiral Winfield Scott Schley, Commander of the U.S. Naval Forces in the Spanish American War. First commercially propagated under the name Admiral Schley in

1902 by D.L. Pierson, Monticello, Fla. **Nut:** oblong with acute apex and base; asymmetric; 54 nuts/lb, 62% kernel; kernels golden with narrow dorsal grooves. **Tree:** protogynous, with midseason pollen shed and midseason pistillate receptivity. Long considered the standard of nut quality for the pecan industry. Used extensively in breeding. Female parent of Sioux, Shawnee, Cherokee, Oconee, Woodroof, and Cape Fear. Male parent of Apache. Susceptible to scab, black pecan aphid, and a trunk disorder described as phomopsis canker. Recommended (1990) for planting in Arkansas.

Sovereign.—See Texas Prolific.

Steffek.—See Prilop of Lavaca.

Stuart (Castanera).—Seedling selection from the orchard of J.R. Lassabe at Pascagoula, Jackson County, Miss. Lassabe planted the orchard about 1874 using nuts of unknown parentage obtained from Mobile, Ala. After the orchard was purchased by Captain E. Castanera, the tree gained fame for its high yields. First propagated by A.G. Delmas in 1886 as Castanera. Propagated about 1890 by J. Keller and Col. W.R. Stuart of Ocean Springs, MS under the name Stuart. **Nut:** oblong elliptic with obtuse apex and rounded base; round in cross section; dark stripes on shell; 51 nuts/lb, 49% kernel; kernels golden to light brown in color with wide, shallow dorsal grooves, deep secondary dorsal grooves and a pronounced basal cleft. **Tree:** protogynous with late pollen shed and midseason pistillate receptivity. Resistant to scab. Susceptible to downy spot, black pecan aphids, and yellow aphids. Late to begin growth in spring, making the cultivar hardy in North GA, AK, and OK. Slow to bear. There are more acres of Stuart trees than any other cultivar. Recommended (1990) for planting in Alabama, Arkansas, Florida, Georgia, Mississippi, North Carolina, Oklahoma, South Carolina, and Tennessee.

Success.—Seedling selection from orchard planted about 1890 by W.B. Schmidt, Ocean Springs, Miss. Selected for excellent kernel quality by T. Bechtel in 1901, propagated in 1902, introduced in 1903. Female parent of Choctaw and Mohawk. Male parent of Barton, Comanche, and GraTex. **Nut:** oval elliptic with obtuse asymmetric apex and obtuse to rounded base; round in cross section; shell dark striped at apex; 48 nuts/lb, 50% kernel; kernels golden to light brown in color, with wide, shallow dorsal grooves, prominent ventral groove and wide, secondary ventral protandrous, with midseason pollen shed and mid- to late-season receptivity. **Tree:** very susceptible to scab, although once quite resistant. Very susceptible to shuck disorders “shuck dieback” (stress related) and “stem end blight” [possibly caused by *Glomerella cingulata* (Ston.) Spa. and V. Sch.]. Still a common cultivar found in old orchards, especially in Texas and Alabama, often planted with Stuart. Recommended (1990) for planting in Arkansas and South Carolina.

Sumner.—Orig. as chance seedling in Tift County, Ga., discovered by W.E. Sumner about 1932. **Nut:** oblong, with obtuse apex and base; round to flattened in cross section; 39 nuts/lb, 61% kernel; kernels with wide dorsal grooves and deep secondary dorsal grooves. **Tree:** protogynous, with mid- to late season pollen shed and early- to midseason receptivity. Precocious and prolific, with consistent production. Ripens late, almost two weeks after Stuart. Generally resistant to scab, although recently susceptible in some locations. Susceptible to black pecan aphids. Recommended (1990) for planting in Alabama, Florida, Georgia, and Louisiana.

Surprise.—Orig. as chance seedling grafted to Pioneer in 1963 in Baldwin County, Ala., in orchard of L.V. Underwood. Scion died and stock grew to “surprise” the orchardist and become the Surprise tree. Discovered in 1968. Seedling grew from unknown seedstock (Success suspected based on nut shape; consistent with isozyme genotypes). Tested by Gulf Coast Substation, Fairhope, Ala., from 1983. Introduced commercially by Dellwood Nursery, Foley, Ala., about 1983. **Nut:** ovate elliptic, with acute apex and rounded base; flattened in cross section; 31 nuts/lb, 51% kernel; kernels with wide dorsal grooves, concave ventral surface. **Tree:** initiates growth late, mid-April in Fairhope. Protandrous. Moderate precocity, with consistent production on mature trees. Ripens mid- to late-season, about 6 days after Stuart. Good disease resistance in south Alabama. Recommended for trial planting in Alabama.

Texas Prolific (Sovereign).—Seedling selection made by E.E. Risien from his orchard of San Saba seedlings. Nuts were planted in

1895 and buds from promising seedlings were budded into the tops of mature trees in 1897. One such bud bore fruit in 1898. Named Sovereign in 1899. Risien changed the name to Texas Prolific in 1900, and most trees of the cultivar are now called by that name. **Nut:** oblong elliptic with right angled apex and obtuse base; rough shell; 51 nuts/lb, 51% kernel; kernels golden in color, with deep dorsal grooves, secondary grooves, ventral groove and basal cleft. Protandrous, with early pollen shed and midseason receptivity. Mature trees have shaggy bark. Susceptible to stem phylloxera.

Van Deman (*Duminie Mire, Paragon*).—Seedling grown from a nut planted in 1836 by Duminie Mire, Union, St. James Parish, Louisiana. The nut was collected from an outstanding tree growing on nearby land owned by Mr. Gravois. Grafted by Emil Bourgeois as Duminie Mire in 1877 at Rapidan Plantation. Bourgeois later sold grafted seedlings. Renamed Van Deman by W.R. Stuart, Ocean Springs, Miss., in honor of H.E. Van Deman, USDA pomologist. Sold by H. Post, Fort Worth, Texas, in 1900 under the name Paragon. In 1990, there were more than 1000 acres of Van Deman grooves. Tree: planted in Georgia, and about 800 in Texas. **Nut:** oblong with acute apex and obtuse base; flattened in cross section; 67 nuts/lb, 44% kernel; kernels cream to golden in color, with deep, narrow dorsal grooves and a deep basal cleft. **Tree:** protogynous, with late pollen shed and midseason pistillate receptivity. Susceptible to scab, vein spot, and downy spot.

Western (*Western Schley*).—Seedling selection made by E.E. Risien, San Saba, San Saba County, Texas, introduced around 1924. Named in relation to Schley, which it resembles in nut shape. Once thought to be a progeny of San Saba, but could not be based on genotypes for malate dehydrogenase and leucine aminopeptidase. There are more trees of Western than any other cultivar in the western pecan growing region. **Nut:** oblong elliptic to oblong, with right angled apex and acute base; asymmetric; round in cross section; shell surface rough; 57 nuts/lb, 58% kernel; kernels golden to light brown, with deep, tight dorsal grooves that trap packing material and cause kernels to break during shelling. **Tree:** very susceptible to scab and downy spot. Recommended (1990) for planting in Arizona, California, New Mexico, Oklahoma, and west Texas.

Western Schley.—See Western.

PLUM—ASIAN

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Bradprune.—Orig. in Le Grand, Calif., by Lowell and Norman Bradford. Open-pollinated seedling of unknown plum seedling. USPP 8969; 8 Nov. 1994. **Fruit:** medium, 54 mm in diam., 67 mm long; oblong; skin very dark red to deep reddish orange; similar to Grand Rosa with darker red skin color; flesh light orange yellow; semi-freestone; matures early August in California. **Tree:** vigorous, upright and medium production; self-incompatible.

Early Rosa.—Orig. in Le Grand, Calif., by David Wilson. Mutation of Late Santa Rosa. USPP 8955; 26 Oct. 1994. **Fruit:** medium, 53 to 58 mm in diam., 51 to 58 mm long; ovate; skin bright cherry red to dark purple; flesh light red to light amber-yellow; clingstone; matures seven to 10 days before Santa Rosa. **Tree:** vigorous, upright to upright-spreading and productive; self-fertile.

Emerald Beaut.—Orig. in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. Wickson x 3W32LC (Red Beaut open-pollinated). USPP 9162; 13 June 1995. **Fruit:** large, 62 to 65 mm in diam.; globose, slightly elongated; skin light green to yellowish green; flesh light yellow; high soluble solids, 16% average; clingstone; matures early August in California. **Tree:** vigorous, upright; heavy and regular production.

Green Jade.—Orig. in Dinuba, Calif., by James W. Taylor, assigned to Ito Packing Co., Reedley, Calif. Wickson open-pollinated. USPP 8069; 22 Dec. 1992. **Fruit:** globose; medium size, 55 mm; skin green to yellowish green; flesh light yellow; clingstone. In central San Joaquin Valley, ripens 25 May to 1 June. **Tree:** medium vigor, semi-upright to spreading. Blossom: medium, white, yellow anthers, blooms

about 1 week ahead of Santa Rosa, can be pollinized by Santa Rosa or Keisey.

Melrose.—Orig. in Orange Cove, Calif., by Leonard Kamada and Ignacio Sanchez, assigned to David Kamada. Mutation of Ambra. USPP 8864, 16 Aug. 1994. Fruit medium to large, 56 to 60 mm in diam., 43 to 49 mm high; oblate; skin deep purple; flesh pale yellow; matures first week of June in California. **Tree:** vigorous, upright to upright-spreading; productive.

PLUM ROOTSTOCKS

T.G. Beckman

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Ademir.—Clonal plum rootstock compatible with European plum and Asian plum. Orig. by M.A. Moreno, M.C. Tabuenca, and R. Cambra, Est. Exp. Aula Dei (CSIC), Zaragoza, Spain. Open-pollinated seedling of Myrobalan. Selected in 1990 and tested as Myrobalan 599 AD. Roots easily by hardwood cuttings. As rootstock, produces trees 15% smaller than those grafted to Myrobalan B. Adapted to heavy and calcareous soils. Resistant to iron chlorosis and root asphyxia. Variable compatibility with apricot. **Tree:** when unbudded, 1-year-old shoots are purplish red-green in spring and summer and purplish-brown and green in winter. Leaves: wavy dentate margin and are larger and deeper green than those of Myrobalan B. Occasionally, a single gland is present at the base of the leaf blade. Flowers: white with yellow stamens, similar in size to and bloom with Myrobalan B. **Fruit:** rounded, symmetric and slightly smaller than those of Myrobalan B. Fruit flesh is yellow-amber, reddish beneath skin. Pit: small clingstone. Reference: Moreno et al., 1995. HortScience 30:1475–1476.

PLUMCOT AND HYBRIDS

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Dapple Dandy.—Orig. in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. 58GA338 plum x plumcot selection of unknown parentage. 58GA338 is Laroda x Queen Ann. USPP 9254; 22 Aug. 1995. **Fruit:** globose to oblate, sl larger on one side, large size, 70 mm; skin tan to golden brown overspread with mottled dark red to bordeaux red, glabrous; flesh orange-white to pale orange around pit to light red to rose red near skin; high soluble solids, 17.4 average; clingstone. Ripens last of July in California. **Tree:** vigorous, upright, productive. Blossom: medium, white, glabrous pistil.

Flavorella.—Orig. in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. 35EA376 open-pollinated. 35FA376 is an open-pollinated seedling of Red Beaut. USPP 8470; 23 Nov. 1993. **Fruit:** globose; medium size, 57 mm; skin yellow to apricot yellow with soft pubescence shorter than apricot; flesh yellow; clingstone. In central California ripens 5–11 June. **Tree:** vigorous, semi-upright, productive. Blossom: medium, white, pubescent pistil.

Tri-Lite.—Orig. in Modesto, Calif., by Chris, Gary, and Grant Zaiger and Leith Gardner. 23EA103 x mixed pollen from three plum x peach selections. 23EA103 is an open-pollinated seedling of O'Henry. Pollen mix from 4G946, 4G816, and 4G1008 interspecific plum x peach with the common female parent Red Beaut plum x unknown peach. USPP 8389; 28 Sept. 1993. **Fruit:** globose; medium, 60 to 64 mm; skin white to pink white with red blush, with very short pubescence; flesh white; clingstone; ripens last of June. **Tree:** vigorous, upright. Blossom: large, showy, pink.

QUINCE

Joseph D. Postman and Kim E. Hummer

USDA—ARS, National Clonal Repository, Corvallis, Ore.

Apple.—see Orange

Bereczki (*Bereczki, Beretzki*).—A very old Serbian cultivar named after an eminent Hungarian pomologist, Professor Bereczki.

Fruit: very large, pear shaped, golden yellow. Quality very good, tender when cooked. **Tree:** very vigorous, heavy yielding, precocious.

Champion.—A standard quince cultivar since the late 1800s. Originated in the United States about 1870. **Fruit:** intermediate shape between apple and pear; large, up to 720 g (24 oz.); skin yellowish green; flesh white to yellow, almost as tender as apple; slightly astringent; ripens in midseason, generally October in Northern latitudes; later than Orange; keeps very well. **Tree:** vigorous, larger and taller than Orange, cold hardy, precocious, very productive; may not mature in regions with short season.

Cooke's Jumbo (Jumbo).—Selected by Herb Kaprielian, Dinuba, Calif. One tree in his orchard of Van Deman Quince consistently bore larger fruit than the other trees. Introduced by L.E. Cooke Nursery, Visalia, Calif., in 1972. **Fruit:** pyriform, large to very large, 12 to 15 cm in diam.; skin yellowish-green; flesh white; ripens in September and October.

Ekmek.—An unusually juicy cultivar from Turkey, recently brought into the United States in 1986 and released from quarantine in 1991. **Fruit:** pyriform, large and attractive; skin yellow, thick, slightly hairy; flesh crisp and juicy, mild flavor; matures at the end of September in the Kocaeli district of Turkey and can be stored until February; used fresh, dried, and for jam or syrup. **Tree:** open canopy, moderately vigorous and productive. The name Ekmek means "bread" in Turkish. The Ekmek group encompasses many subtypes that may differ in size and taste.

Jumbo.—See Cooke's Jumbo.

Limon.—A desirable lemon-shaped cultivar in the markets of Turkey. Brought to the United States in 1986 and released from quarantine in 1991. **Fruit:** somewhat elongated; skin yellow, thick and hairy; flesh yellowish, crisp, hard and juicy, mild flavor; matures late September in Turkey and can be stored until December. **Tree:** moderate vigor, upright when young but becoming pendulous.

Meech (Meech's Prolific).—Origin in Connecticut about 1850 where it was grown as Orange. May be a strain of Champion. Grown in Vineland, N.J., in the mid-1800s. Introduced in 1883 by Rev. W.W. Meech. **Fruit:** large, pyriform, up to 54 g (18 oz.), skin very fine textured, bright yellow, exceedingly fragrant, excellent flavor, ripens 2 weeks earlier than Champion. **Tree:** slow growing, heavy and annual bearing; precocious.

Meech's Prolific.—See Meech.

Monstrueux de Vranja.—See Vranja.

Orange (Apple).—Early-ripening habit has made this the leading quince grown in the northeastern United States. Orange is a group rather than a distinct genotype. Its origin is uncertain. Many orange or apple-shaped quince came to be called "Orange" or "Apple," and they were thought to come true from seed, resulting in several strains. **Fruit:** large to very large, nearly round, faintly ribbed; skin bright golden-yellow to greenish-yellow, very pubescent; flesh orange-yellow, tender, fine texture, aromatic; early midseason. Quality very good when grown in the north where it ripens during cool weather. In New Jersey and south, it often ripens when temperatures are high, resulting in inferior size, flavor and color. **Tree:** vigorous, hardy, productive.

Pineapple.—One of the leading cultivars in California. Developed by Luther Burbank in Santa Rosa, Calif., and released in 1899. **Fruit:** large, roundish, resembles Orange, but smoother, more globular, lighter in color, and slightly larger; skin light golden, smooth; flesh white, pineapple-like flavor, slightly aromatic, tender when cooked. **Tree:** ornamental, 3 to 8 m tall, cold hardy, tolerates wet soil, blooms late, flowers tinted pink, self-fertile, needs 200 to 300 h chilling, as productive as Orange.

Portugal.—Very old cultivar from Portugal. **Fruit:** very large, oblong-oval; skin almost orange when ripe, very wooly, flesh juicier than other types; turns fine purple or deep crimson when cooked; flavor very good; ripens very early, 10 days before Orange. **Tree:** vigorous, becoming large and spreading, not productive; late to begin bearing.

Rea (Rea's Mammoth).—A strain of Orange disseminated by Joseph Rea of Coxsackie, New York in the 1800s. **Fruit:** larger than Orange, and ripens slightly later. **Tree:** not as vigorous or cold hardy as other cultivars.

Rea's Mammoth.—See Rea.

Seker Gevrek.—A nonastringent cultivar. Brought to the United States in 1986 and released from quarantine in 1991. **Fruit:** somewhat, regularly shaped, tapering slightly toward the pedicel and calyx ends; skin bright yellow, thin and slightly hairy; flesh crispy, nonastringent, slightly sour; matures early October in Turkey and can be stored until February. The cultivar name means "Sweet and Crispy" in Turkish.

Smyrna.—Brought from Smyrna, Turkey, by R.C. Roeding of Fresno, Calif., in 1897. **Fruit:** oblong to pyriform, large to very large, furrowed; skin lemon yellow with brown pubescence; flesh light yellow, fragrant, mild; ripens with Orange; excellent keeper, stores longer than other quince cultivars in refrigeration. **Tree:** small but vigorous; large, thick leaves; self-fruitful, needs 200 h chilling.

Tekkes.—An attractive nonastringent Turkish cultivar with skin that is hairy like a camel. Brought to the United States in 1986 and released from quarantine in 1991. **Fruit:** large, attractive; skin bright yellow, thick and very hairy; flesh crisp, juicy, sweet, nonastringent; matures late September and can be stored for 2 months. **Tree:** moderately vigorous and productive.

Van Deman.—Orig. in Santa Rosa, Calif., by Luther Burbank. Selected from among 700 crosses of Orange x Portugal. Introduced in 1891. **Fruit:** very large, oblong to pyriform; skin smooth, pale orange with little pubescence; flesh pale yellow, rather coarse, slightly astringent, aromatic, subacid, juicy, becomes deep red when cooked; core large, open. **Tree:** vigorous, prolific, hardier than other quince cultivars. Named in honor of pomologist H.E. Van Deman.

Vranja (Monstrueux de Vranja).—A Serbian cultivar, possibly the same as Bereczki. Orig. near Vranje (Vranja). **Fruit:** pyriform, matures late, October–November.

RASPBERRY

Hugh Daubeney

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Alkoopina.—A yellow-fruited, primocane-fruiting raspberry released for temperate Australia. Orig. in Toolangi, Australia, by G. McGregor, Inst. for Hort. Development, Victoria. Chilcotin x Amity; cross made in 1983 by H.A. Daubeney, Agriculture and Agri-Food Canada, Pacific Agr. Res. Centre, Vancouver, B.C.; tested as A83-10-A1; introd. in 1992. Propagated under an agreement with the Australian Rubus Growers Assoc. **Fruit:** medium-large; yellow; drupelet coherence and firmness superior to most yellow raspberries; easy to harvest; somewhat susceptible to rain damage and sun scorch. **Plant:** yield equally distributed between floricanes and primocane crop; spineless; canes similar to Willamette in rigidity; numerous primocanes.

Allgold.—See Golden Bliss.

Earlswest.—A high-quality, early-ripening black raspberry. Orig. in Beltsville, Md., by C.J. Galletta, USDA-ARS. Contains germplasm from both eastern and western North American black raspberry species, *Rubus occidentalis* and *R. leucodermis*, respectively, selected from open-pollinated seedling population of Oregon-US 1725 (Haut x *R. leucodermis*); tested as US 1631; introd. in 1996. **Fruit:** medium size; black; round conic shape; firm, thick drupelet; sweet flavor; condensed early-ripening season. **Plant:** productive; vigorous; semi-erect habit; very spiny canes; primocanes glaucous and green; floricanes deep purple-brown; laterals medium green; fruit on floricanes borne in compact clusters along the apical two to four nodes of lateral branches; winter hardy. Adapted to the Mid-Atlantic and Pacific Northwest regions.

Elida.—A very early-ripening fresh-market raspberry. Orig. in Rafz, Switzerland, by P. Hauenstein, Ag Baumschulen. CH-8197 Rafz. Mallin M x Chilcotin; introd. in 1993. Plant variety rights held by Promo-Fruit AG, Landstr. 42, CH-8197 Rafz. **Fruit:** medium size; medium firm; bright red; conic; fairly good flavor; very early. **Plant:** vigorous; abundant primocane production; medium length canes with short laterals.

Favorite.—A late-ripening, primocane-fruiting raspberry with spineless canes. Orig. in Soings-en-Sologne, France by Jacques Marionnet. Autumn Bliss x Delmes. Protected by COV 64470. **Fruit:** large; medium red; long shape; good shelf life; good flavor; ripens 1 week later than Heritage in France. **Plant:** high yield; spine-free, erect,

vigorous canes; relatively few primocanes. Susceptible to raspberry bushy dwarf virus.

Framita.—A spine-free raspberry with an excellent flavor. Orig. in Switzerland. Spineless mutant of Zefa 2. Plant variety rights held by Haberli Obst-und Beerenzentrum AG, CH-9315 Neukirch-Egnach. **Fruit:** medium size; medium firm; dark red; round shape; excellent flavor. **Plant:** medium vigor; strong canes with medium length laterals. Susceptible to root rot.

Galante.—A primocane-fruited raspberry with spineless canes. Orig. in Soings-en-Sologne, France by Jacques Marionnet. Autumn Bliss x Delmes. Protected by COV 64468. **Fruit:** large; medium red; relatively long shape; good shelf life; good flavor; ripening season similar to Heritage in France. **Plant:** spine-free, very erect canes; relatively few primocanes.

Glen Yarra.—A high-yielding raspberry adapted to temperate Australia. Orig. in Invergowrie, Scotland, by D.L. Jennings, Scottish Crop Res. Inst. Complex parentage involving *Rubus occidentalis*, Malling Jewel, Burnholm, Lloyd George and Malling Landmark; cross made in 1968; tested as SCRI 6820/64; introd. in 1995 by G.R. McGregor, Inst. for Hort. Development, Melbourne, Victoria. Propagated under an agreement with the Australian Rubus Growers Assoc. **Fruit:** medium to large; firm; medium red color with downy appearance; midseason ripening. **Plant:** high yield; strong, erect spineless canes; relatively few primocanes; relatively low chilling requirement. Susceptible to root rot; reaction to raspberry bushy dwarf virus unknown.

Golden Bliss (Allgold in England).—A yellow primocane-fruited mutant of Autumn Bliss. Orig. in Kings Lynn, Norfolk, England, by P. Walpole and R.W. Walpole, Ivy Farn, Terrington St. Clement. Registered in Switzerland by Haberli Obst-und Beerenzentrum AG, CH-9315 Neukirch-Egnach. Similar to Autumn Bliss except for yellow fruit.

Himbo Star.—A large fruited raspberry adapted to fresh market. Orig. in Rafz, Switzerland, by W. Hauenstein, Ag Baumschulen, CH-8197 Rafz. Rote Wadenswiler x unknown; introd. in 1980. Plant variety rights held by Promo-Fruit, AG, Landstr. 42, CH-8197 Rafz. **Fruit:** large; firm; good shelf life; well presented and easy to harvest; fairly good flavor. **Plant:** moderate yield; moderate vigor; very long, somewhat weak laterals; relatively poor primocane production. Moderate to high susceptibility to root rot.

Lucana.— See Resa.

Malahat.—A high-yielding, early-ripening, fresh-market raspberry. Orig. in Vancouver B.C., Canada, by H.A. Daubeney and C. Kempler, Agriculture and Agri-Food Canada, Pacific Agr. Res. Centre. Meeker x BC/SCRI 7853/116 (selection has complex parentage including Nootka, *Rubus occidentalis*, *R. phoenicolasius*); cross made by HAD in 1985; selected in 1987; tested as BC 85-5-24; introd. in 1996. Propagated under a royalty agreement by Sieglin Ent., Abbotsford, B.C. **Fruit:** large; firm; conic; glossy medium red; easy to harvest; flavor not as sweet as Chilliwack but considered good; good shelf life; intermediate reaction to *Botrytis* post harvest rot; ripens earlier than any other high-quality Pacific Northwest variety. **Plant:** high yield; vigorous, fairly upright habit; adequate primocane numbers; winter hardiness appears similar to Meeker and less than Chilliwack. Relatively susceptible to spur blight; susceptible to cane spot; resistant to cane *Botrytis*; relatively susceptible to *Phytophthora* root rot in greenhouse screening test; susceptible to natural infection by raspberry bushy dwarf virus; resistant to the common strain of the North American aphid vector of the raspberry mosaic virus complex.

Marve.—A high-yielding, late-ripening raspberry adapted to western Europe. Orig. in Kapelle, The Netherlands, by J. Westveer. Probably an open-pollinated seedling of Jochems Roem; selected in 1973; introd. in 1990. Licensed by E.C. Meulbloc Boomkwekerij, 4434 AG Kwadendamme Zeeland, Netherlands. **Fruit:** large, bright medium to dark red; firm; conic shape; moderately easy to harvest; good flavor; ripens a few days later than Schonemann; some resistance to *Botrytis* rot. **Plant:** high yield; vigorous, strong canes with high density of spines; relatively few primocanes. Probably has some resistance to cane diseases and to *Phytophthora* root rot.

Meco.—A fresh-market raspberry adapted to France. Orig. in d'Angers, by V. Bellenot-Kapusta, Station D'Amelioration Des Especes

Fruitieres Et Ornementales; Meeker x Rose de Cote d'Or; introd. in 1990. **Fruit:** medium size; soft; good flavor. **Plant:** very high yield. Tolerant to *Phytophthora* root rot in the field.

Niniane.— See Rubaca.

Princess.—An early-ripening primocane fruit raspberry. Orig. in Soings-en-Sologne, France by Jacques Marionnet. Autumn Bliss x Meeker. Protected by COV 64469. **Fruit:** medium size; medium red; length and width similar; good flavor; early-ripening season similar to Autumn Bliss in France. **Plant:** high yield; very few spines; moderate primocane numbers.

Resa (Lucana).—A very early-ripening raspberry. Orig. as a chance seedling in a grower field in Germany. Introd. in 1993. Plant variety rights held by R. and H. Sauer, Sanderst. 6, DW-7604 Appenweiher. **Fruit:** medium to large size; medium firm; bright red; uniform shape; well presented; good flavor. **Plant:** low yield; weak cane growth; tends to bear primocane fruit at tip of new cane; dead buds appear in spring; moderate primocane production.

Rubaca (Niniane).—A raspberry highly resistant to root rot. Orig. in Freising-Weihenstephan, Germany by H. Schimmelpfeng, Inst. of Fruit Growing, Techn. Universitat, from program emphasizing resistance to *Phytophthora*-incited root rot. Rucanta x Latham; introd. in 1993. Plant variety rights held by CH: Obecta AG, CH-9315 Neukirch-Egnach, Switzerland and G.H. Herr, Baumschulweg 19-25, D-53340 Meckenheim, Germany. **Fruit:** medium size; medium firm; bright red; round to conic; mid- to late season; good flavor. **Plant:** moderate vigor; very strong canes with prominent spines and compact laterals. Highly resistant to root rot.

Wawi.—A fresh-market raspberry adapted to France. Orig. in d'Angers, by V. Bellenot-Kapusta, Station D'Amelioration Des Especes Fruitieres Et Ornementales. Washington x Willamette; introd. in 1990. **Fruit:** medium to small size; firm; good flavor; attractive. **Plant:** high yield. Tolerant to *Phytophthora* root rot in the field.

STRAWBERRY

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Anacapa.—A large-fruited, fresh-market strawberry adapted to southern California. Orig. in Watsonville, Calif., by H.A. Johnson, T.M. Sjulin, D. Small, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Joe Reiter x Crown Variety; introd. in 1988. USPP 7171. **Fruit:** large; glossy, dark red exterior and light red interior color; firm; conic to short to medium wedge shape; achenes at surface; large, slightly reflexed calyx; good tangy flavor; extended harvest season; moderately resistant to *Botrytis* rot. **Plant:** short-day type; high yield; medium size; medium chilling requirement; abundant runner production. Susceptible to anthracnose, powdery mildew, and two-spotted spider mite; some resistance to common leaf spot; resistant to crown rot; tolerant to viruses occurring in California.

Avila.—A fresh-market strawberry producing fruit from April to October in central coastal California. Orig. in Watsonville, Calif., by T.M. Sjulin, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Chandler x Commander; tested as V258; introd. in 1993. USPP 8745. **Fruit:** large; light red exterior and light red interior, often white at core; firm; long conic or wedge; achenes recessed; large, reflexed calyx; excellent flavor; extended harvest season; some resistance to *Botrytis* rot. **Plant:** short-day type; high yield; moderate chilling requirement; large crown; abundant runner production. Susceptible to *Verticillium* wilt, anthracnose, two-spotted spider mite and flower thrip; some resistance to powdery mildew, common leaf spot and angular leaf spot; tolerant to viruses occurring in California.

Balboa.—A fresh-market strawberry adapted to both central coastal and southern California. Orig. in Watsonville, Calif., by T.M. Sjulin, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Swede x Douglas; tested as 3V23; introd. in 1994. USPP 9130. **Fruit:** large to medium size; glossy, uniform medium red exterior and interior color; firm but can soften in storage; conic to medium to long wedge; achenes at surface or slightly recessed; excellent flavor; susceptible to both *Botrytis* and *Rhizopus* rots. **Plant:** short-day type; high moderate early yield in southern California and high yield over extended

season in central coastal California; moderately low chilling requirement; abundant runner production after chilling. Susceptible to *Verticillium* wilt, angular leaf spot, anthracnose two-spotted spider mite and flower thrip; some resistance to powdery mildew; tolerant to virus diseases occurring in California.

Benihibari.—A processing strawberry adapted to open field planting in Japan. Orig. in Kawanishi, Hyogo, Japan, by M. Miyazaki, H. Sata, M. Oku, and T. Goto, Toyo Inst. Food Technology. America x Hokowase. **Fruit:** glossy, red exterior and glossy, scarlet interior color; conic; very firm; calyx easily detached; soluble solids and acid content similar to America; excellent for jam and other processed products; some resistance to preharvest *Botrytis*; harvest season mid-May to early June. **Plant:** spreading habit.

Carezza.—A high-yielding, fresh-market strawberry adapted to continental climates in Europe. Orig. by Consorzio Italiano Vivaisti Co. in Ferrara, Italy. Addie x Parajo; cross made in 1984. Patented. **Fruit:** large; firm with some hollowiness; conic shape with pointed apex; bright red exterior and uniform, medium red interior color; achenes recessed; large calyx; aromatic flavor with medium sweetness and acidity; ripens 3 days later than Addie; adapted to transporting. **Plant:** short-day type; high yield; partially upright growth habit; moderate vigor; easily transplanted; dark green foliage; flowers at the same level as the leaf canopy.

Cartua.—An early-ripening, day-neutral strawberry adapted to Spain. Orig. in Tudela-Narvarra, Spain, by J.M.A. Lopez. Parents were selected from seedlings obtained from open-pollination among 32 varieties; introd. in 1992; USPP 8598. **Fruit:** very large; glossy orange red exterior and medium red interior color; firm; mostly long, narrow conic shape; achenes recessed; medium sweetness and acidity; when planted in October begins ripening in late January. **Plant:** day-neutral type similar to Selva; medium vigor; semi-erect flower trusses above leaf canopy.

Commander.—A high-yielding, fresh-market strawberry adapted to central coastal California. Orig. in Watsonville, Calif., by H.A. Johnson, D.W. Small, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Crown Variety x Joe Reiter; introd. in 1989. USPP 7024. **Fruit:** large; light red exterior and interior color, may show some albinism; firm; mostly conic to long conic; achenes at or below surface; large calyx; good shelf life; excellent flavor; shows cracking after rain; some resistance to *Botrytis* rot. **Plant:** short-day type; high yield over an extended fruiting season if given sufficient chilling but considered low chilling type; vigorous; multiple crown; resistant to crown rot. Relatively tolerant to common leaf spot; susceptible to angular leaf spot, anthracnose, powdery mildew and flower thrip; supports large populations of two-spotted spider mite before showing injury.

Coogee.—A high-yielding, fresh-market strawberry adapted to temperate Australia. Orig. in Knoxfield by B.J. Morrison, Inst. for Hort. Development, Victoria. Selva x Parajo; cross made in 1988; selected in 1989; tested as 88-027-583; introd. in 1994. Plant variety rights held by Daratech Pty Ltd., Melbourne. **Fruit:** large; firm; glossy, bright red but darkens with maturity and orange-red interior color; conic to flat conic; calyx removed with moderate ease; good flavor; midseason ripening. **Plant:** short-day type; high yield; erect, open habit; flowers level with foliage, abundant runner production.

Darlibelle.—A firm-fruited fresh-market strawberry with an excellent shelf life. Orig. in Milly-La-Forêt, France by R.C. Hureau, Societe Civile Darbonne. Gariguet x Aiko; introd. in 1989. USPP 7563. **Fruit:** medium size; very firm; glossy medium red exterior and light red and white streaked interior color; conic; calyx adheres strongly; achenes at surface; not particularly aromatic; early to midseason ripening; tolerant to *Oidium* and *Botrytis* rots. **Plant:** short-day type; vigorous; abundant runner production; strong root system; tolerant to mineral deficiencies in soil but sensitive to excessive nitrogen.

Darline.—A fresh-market strawberry with an excellent shelf life. Orig. in Milly-La-Forêt, France by R.C. Hureau, Societe Civile Darbonne. Gariguet x Aiko; introd. in 1989. USPP 7566. **Fruit:** large; firm; orange-red exterior and orange-red to white interior color; conic to cylindric; calyx adheres strongly; achenes below surface; medium sweetness and acidity; midseason ripening over extended

time period; tolerant to *Oidium* rots. **Plant:** short-day type; vigorous; abundant runner production; tolerant to mineral deficiencies in soil but sensitive to excessive nitrogen. Tolerant to crown rot.

Dorit.—An early-ripening strawberry adapted to culture under polyethylene tunnels in Israel. Orig. in Bet Dagan, Israel by E. Izsak and S. Izhar, Ministry of Agriculture, Volcani Center. Dover A x Nurit; introd. in 1991. USPP 7869. **Fruit:** large; medium firm; orange-red exterior and light red interior color; conic to wedge; calyx adheres strongly; achenes at surface; sweet flavor; good shelf life; season under tunnels from November to summer. **Plant:** short-day type; high yield; vigorous; abundant runner production.

E26.—A fresh-market strawberry that produces fruit late in the fall and winter following summer planting in southern California. Orig. in Watsonville, Calif., by H.A. Johnson, T.M. Sjulin, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. E23 x Driscoll selection D5.23; introd. in 1989. USPP 7522. **Fruit:** large to medium size; moderately firm; medium red exterior and light red to white interior color; conic to short wedge; achenes at surface or sunken; acceptable flavor; intermediate shelf life. **Plant:** everbearing type; high yield through fall and winter months; high chilling requirement; abundant runner production after long period of cold storage. Susceptible to *Verticillium* wilt, powdery mildew, anthracnose, two-spotted spider mite and flower thrip; tolerant to common leaf spot and angular leaf spot.

Emily.—A very early-ripening, high-yielding strawberry. Orig. in East Malling, Kent, England, by D. Simpson and J. Bell, Horticulture Res. Intl. Honeoye x Gea; cross made in 1988; selected in 1989; tested as EM 426; introd. in 1995; Market rights held by NSA Plants Ltd., East Malling. **Fruit:** medium size; moderately firm with good skin strength; deep red color; regular conic shape; ripens 5 days earlier than Honeoye; sharp flavor. **Plant:** high yield; moderately vigorous; erect habit; good fruit exposure; flowers susceptible to frost damage; adapted to protected culture. Resistant to powdery mildew; susceptible to *Verticillium* wilt.

Eris.—A high-yielding, early-ripening, fresh-market strawberry adapted to both mediterranean and continental climates in Europe. Orig. by Consorzio Italiano Vivaisti Company in Ferrara, Italy. Patented. **Fruit:** large; very firm; glossy light red exterior and orange-red interior color; regular, conic shape; achenes recessed; large calyx with reflexed sepals; excellent flavor, high soluble solids and intense aroma; ripens 5 days earlier than Chandler in mediterranean-type climate; adapted to transporting. **Plant:** short-day type; high yield; medium vigor; medium green-colored leaves; flowers at the same level as leaf canopy; widely adapted.

Eros.—A dessert-quality strawberry released as an alternative to Elsanta in southeastern England. Orig. in East Malling, Kent, England, by D. Simpson and J. Bell, Horticulture Res. Intl. Elsanta x Allstar; cross made in 1985; selected in 1986; tested as EM220; introd. in 1994. Marketing rights held by NSA Plants Ltd., East Malling. **Fruit:** large; firmness similar to Elsanta; glossy, medium-red external color; regular conic shape; midseason ripening equivalent to Elsanta; tends to escape *Botrytis* rot because of good exposure; easy to harvest; pleasant, well-balanced flavor. **Plant:** short-day type; high yield; moderately vigorous; abundant runner production; erect, fairly open habit. Moderately susceptible to powdery mildew and *Verticillium* wilt; resistant to two of the three most common United Kingdom races of the red stele causal organism.

Florika.—A highly flavored decaploid *Fragaria vesca* strawberry for home gardens. Orig. in Freising-Weihenstephan, Germany, by R. Bauer, B. Schindwein, G. Spiegler, and H. Schimmelpfeng, Inst. of Fruit Growing, Techn. Universitat. Inc. x 168 (a hexaploid hybrid between Sparkle and tetraploid *Fragaria vesca semperflorens*) x Klettererdbeere Hummi; selected in 1984; tested as *F. vesca* 84; introd. in 1990. Protected by plant breeders rights in Germany and Switzerland and also USPP. **Fruit:** medium to small size; medium red; excellent flavor; resistant to *Botrytis*-caused rot. **Plant:** short-day type; abundant runner production will form meadow ground cover. Tolerant to powdery mildew and leaf spot.

Frel.—An ornamental strawberry continuously producing attractive pink flowers. Orig. in Bourne End, Buckinghamshire, England, by J.R. Ellis. *Fragaria xanassa* x *Potentilla palustris* and selected from

fifth backcross to *F. xanassa*; introd. in 1989. Assignee is Blooms of Bressingham Ltd., Norfolk, England. USPP 7598. Flower: deep pink; bloom period from mid-spring to late fall. **Fruit:** small; white with dark green seeds turning glossy scarlet and dark crimson with dark brown seeds; more produced in warm weather. Plant: herbaceous perennial, spreads by runners; leaves compound with three leaflets and are semi-evergreen and die back under severe winter conditions. Used as ground cover, pot plant, or hanging basket.

Grace.—An early-ripening, high-yielding, fresh-market strawberry adapted to Florida. Orig. in Naples, Fla., by J.J. Augustine and P.P. Chang, BHN, A Joint Venture. BHN 8231 x Parajo; selected in 1984; tested as 8307-183 and BHN 2; introd. in 1990; USPP 8035. **Fruit:** large to medium size; medium firmness; glossy bright red exterior with similar interior color but less intense; medium conic with slightly pointed tip; achenes slightly raised; very good flavor, moderately subacid; highly resistant to cracking; ripens one to two weeks earlier than Parajo and Chandler. **Plant:** short-day type; abundant runner production. Slight tolerance to anthracnose; susceptible to two-spotted spider mite.

Idea.—A high yielding, late ripening strawberry. Orig. in Cesna, Italy, by the Italian Univ. Breeding program. Sel. 79-12-13 x Etna; tested as 84-86-3. Patent pending. **Fruit:** large; moderately firm; light red exterior and interior color; good fresh flavor; fair to good freezing quality. **Plant:** short-day type; high yield; vigorous; performs well on nonfumigated soils. Tolerant to anthracnose; some resistance to red stele causal organism.

Joliette.—A fresh-market, disease-resistant strawberry adapted to Quebec. Orig. in L'Acadie, Quebec, by S. Khanizadeh, D. Buszard, O. Carrise, P. Thibodeau, Agr. and Agri-Food Canada, Hort. Res. Centre, St-Jean-sur-Richelieu, Quebec. Jewel x SJ85189; tested as SJ89288-2; cross made in 1989; introd. in 1996. Patent pending. **Fruit:** large; moderately firm; glossy, medium red exterior and lighter red interior color; globose-conic to short wedge; easily removed, moderately reflexed calyx; good flavor; retains integrity after thawing; midseason ripening. **Plant:** short-day type; high yield; vigorous; medium size; tolerant to herbicide "Sinbar"; performs well on heavy soils and water stress. Appears to be resistant to powdery mildew, leaf scorch, leaf blight and common leaf spot; resistant to six North American races of red stele causal organism.

K1.—A large-fruited strawberry adapted to summer production in central coastal California. Orig. in Watsonville, Calif., by H.A. Johnson, A.Q. Amado, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Driscoll x Driscoll selection J45.40; introd. in 1988. USPP 7160. **Fruit:** large; firm; dark red exterior and interior color; medium wedge; conspicuous yellow achenes above surface; good flavor; limited shelf life and bruises easily. **Plant:** short-day type; high chilling requirement; abundant runner production; Susceptible to powdery mildew and anthracnose.

Ken Sheehy.—A firm-fruited strawberry producing from April to October in central coastal California. Orig. in Watsonville, Calif., by H.A. Johnson, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Driscoll selections B6.117 x D5.23; introd. in 1986. USPP 6231. **Fruit:** large; firm; glossy, dark red exterior and medium to light red exterior color; mostly medium conic shape; achenes above surface; excellent flavor; good shelf life. **Plant:** short-day type; medium chilling requirement; mid- and late summer production relatively poor but production improves during September and October; abundant runner production after excessive chilling. Tolerant to two-spotted spider mite and to viruses occurring in California.

Key Largo.—A firm-fruited strawberry with good flavor and adapted to production from March to November in central coastal California and in December in Florida. Orig. in Watsonville, Calif., by T.M. Sjulín, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Z2 x Commander; tested as UV601; introd. in 1993. USPP 8649. **Fruit:** large to medium size; firm; uniform glossy dark red exterior and lighter red interior color white at core; short to medium conic to wedge; achenes at surface or slightly recessed; good flavor; good shelf life; susceptible to preharvest *Botrytis* rot and some resistance to postharvest *Botrytis* and *Rhizopus* rots. **Plant:** short-day type; minimum chilling requirement but requires adequate cold storage for long season production; abundant runner production; reddish

purple color on petioles on some soil types. Susceptible to *Verticillium* wilt, anthracnose, two-spotted spider mite and flower thrip; not highly susceptible to powdery mildew, common leaf spot or angular leaf spot; tolerant to viruses occurring in California.

Komet.—A late-ripening strawberry producing large fruit suited to processing. Orig. in Germany by H. Franz, D-Rohrmoos, DW-8061 Purthof. Nb 72/13 x Splendida. Plant variety rights held by Maeder Samen, Moosgrasse 36, CH-3274 Buehl/Aarberg. **Fruit:** large; medium firm; fairly good flavor; fairly good shelf life; high citric acid content; late ripening; relatively low susceptibility to rots. **Plant:** short-day type; high yield; very vigorous. Moderate to high susceptibility to leaf spot and leaf scorch; relatively low susceptibility to root rots.

Latestar.—A late-ripening, disease-resistant, fresh-market strawberry adapted to mid-Atlantic states. Orig. in Beltsville, Md., by G. Galletta, U.S. Dept. of Agriculture. Lateglow x Allstar; cross made in 1978; selected in 1980; tested as MDUS 5084; introd. in 1995. **Fruit:** large; firm; glossy medium red external and light red internal color; pleasant and mild slightly acidic flavor; ripens slightly later than Allstar and Lateglow; some *Botrytis* rot resistance. **Plant:** short-day type; vigorous; produces abundant runners; productive on either light or heavy soil; adapted to both matted rows and hill culture; resistant to most leaf and stem diseases; susceptible to leaf blight; resistant to five eastern U.S. races of red stele causal organism.

Majoral.—A large-fruited strawberry with good tolerance to root rots. Orig. in Soignes-en-Sologne, France, by J. Marionnet, GFA, 21 Route de Courmemin, F-41230. **Fruit:** large; medium firm; medium red; long conic shape; fairly good flavor; fairly good shelf life. mid- to late-season ripening; moderately susceptible to *Botrytis*-caused rot. **Plant:** short-day type; high yield; very vigorous, upright habit; winter hardy. Moderately susceptible to powdery mildew; very tolerant to root rots. Adapted to a range of soil conditions.

Marascor.—An early-ripening fresh-market strawberry. Orig. in Soignes-en-Sologne, France, by J. Marionette, GFA, 21 Route de Courmemin, F-41230. **Fruit:** medium size; light red; firm; long conic shape; good shelf life; high citric acid content; low susceptibility to rots. **Plant:** short-day type; moderate yield; vigorous, upright growth. Low susceptibility to leaf diseases and root rots.

Mara Des Bois.—A remontant strawberry producing fruit with the fragrance of wild strawberry. Orig. in Soignes-en-Sologne, France, by Andres Marionnet. Gento x Ostara) x (Red Gauntlet x Korona); introd. in 1991; USPP 8517. **Fruit:** medium size; medium firm; medium red to orange exterior and red orange interior; conic; achenes at surface; excellent flavor; high sugar and medium acid content; resistant to *Oidium* rot. **Plant:** remontant habit with fruit production in June and in fall; medium vigor; abundant runner production. Slightly susceptible to crown rot.

Mars.—A firm-fruit, high-yielding strawberry with a good shelf life. Orig. in Germany by H. Franz, D-Rohrmoos, DW-8061 Purthof. Orion x Nr. 83/68; introd. in 1992. Plant variety rights held by Maeder Samen, Moosgrasse 36, CH-3274 Buehl/Aarberg. **Fruit:** very large; very firm; bright red; good flavor; very good shelf life; midseason ripening; moderately susceptible to *Botrytis*-caused rot. **Plant:** short-day type; very high yield; very vigorous; winter hardy. Low susceptibility to powdery mildew, leaf spot, leaf scorch and root rots caused by *Phytophthora cactorum* and *Rhizoctonia solani*.

Milcin.—A firm-fruited strawberry adapted to Spain. Orig. in Tudela Navarra, Spain, by J.M.A. Lopez, Plantas de Navarra. Chandler x Parker; introd. in 1990. USPP 7861. **Fruit:** very large; firm; glossy orange-red exterior and somewhat lighter orange-red interior color; cylindrical shape; achenes at surface; medium sweetness and acidity; early-ripening; good keeping quality; some resistance to *Botrytis* rot. **Plant:** short-day type; slight tendency to over production; medium vigor; low numbers of runner plants produced.

Mindarie.—A high-yielding fresh-market strawberry adapted to temperate Australia. Orig. in Knoxfield by B.J. Morrison, Inst. for Hort. Development, Victoria. Parker x Selva; cross made in 1988; selected in 1989; tested as 88-023-200; introd. in 1994. Plant variety rights held by Daratech Pty Ltd., Melbourne. **Fruit:** large; very firm; very glossy, bright red exterior and orange-red interior color; conic with even surface; reflexed calyx; excellent shelf life; very good

flavor; midseason ripening. **Plant:** short-day type; high yield; compact; vigorous; abundant runner production; flowers level with foliage.

Mira.—A high-yielding, fresh-market strawberry with red stele resistance. Orig. in Kentville, Nova Scotia, by A. Jamieson, Agriculture and Agri-Food Canada, Kentville Research Centre. Scott x Honeoye; cross made in 1982; selected in 1984; tested as K84-5; introd. in 1995. Canadian Plant Breeders Rights granted in 1995. **Fruit:** large; medium to firm; orange exterior and light red interior color; bi-conic with even surface; achenes recessed; reflexed calyx; weak to medium sweetness and medium to strong acidity; mid to late season ripening; moderate resistance to *Botrytis* rot. **Plant:** short-day type; high yield; vigorous; semi-erect to prostrate scapes; flowers beneath to level with leaf canopy. Moderate resistance to powdery mildew; resistant to Canadian races 2, 3, 4 of red stele causal organism.

Miranda.—A very high-yielding, fresh-market strawberry adapted to mediterranean climates in Europe. Orig. in Battipaglia, Italy, by Consorzio Italiano Vivaisti Co. Sel. n°5 x Santana; cross made in 1985. Patented. **Fruit:** large size maintained throughout harvest season; firm; intense, glossy, orange-red exterior and orange-red interior color; mainly cordate shape with pointed apex; achenes recessed; large calyx; aromatic flavor with medium sweetness and acidity; good shelf life; ripens 2 days earlier than Chandler. **Plant:** short-day type; very high yield; upright, vigorous growth habit; intense, medium green leaves; flowers above the leaf canopy; good resistance to salinity and stress conditions.

OAC St. Clair.—A high-yielding, late-ripening fresh-market strawberry. Orig. in Guelph, Ontario, by J.A. Sullivan and W.D. Evans, Dept. of Horticulture, Univ. of Guelph. OAC 71M59 x OAC 18B34; cross made by W.D.E. in 1972; selected in 1978; tested as 62E55; introd. in 1992. Propagated under royalty agreement between Univ. of Guelph and Ontario propagators. **Fruit:** large; moderately firm with strong skin; glossy red external and uniform red internal color; short wedge to oblate; prominent achenes; good flavor. **Plant:** high yield; vigorous; runners well to produce moderately dense matted row; appears tolerant to herbicide terbacil. Resistant to powdery mildew and leaf scorch; some tolerance to leaf spot but will show symptoms; susceptible to *Verticillium* wilt; resistant to North American race A-6 and susceptible to race A-5 of the red stele causal organism.

Ofra.—An early-ripening strawberry adapted to culture under polyethylene tunnels in Israel. Orig. in Bet Dagan, Israel, by S. Ishar and E. Izsak, Ministry of Agr., The Volcani Centre. Parker x Sel.111; introd. in 1992. USPP 8746. **Fruit:** large; very firm; wedge to conic; glossy orange-red exterior and orange-red interior color; achenes below surface; very strong calyx adherence; good flavor; good shelf life; season under tunnels from November to June. **Plant:** infra short-day type that initiates flowers under relatively long light regimes under short day conditions and is insensitive to night temperatures; vigorous; abundant runner production.

Pelican.—A large-fruited, anthracnose-resistant strawberry adapted to the southern United States. Orig. in 1987 in Beltsville, Md., by G.J. Galletta, U.S. Dept. of Agriculture; selected for resistance to *Colletotrichum fragariae* (anthracnose) by B.J. Smith, Poplarville, Miss., and selected in 1989 for fruit and plant traits by T.J. DiVittorio and R.J. Constantin, Hammond, La. Tested as LAMSUS 87-17-7; introd. in 1996. **Fruit:** very large; glossy orange-red external and pink internal colors; medium firm; yellow achenes flush to surface; long wedge shape; juicy with melting flesh and combined tart and sweet flavor; aromatic; rain can damage skin; resistant to rot caused by *Colletotrichum acutatum*. **Plant:** short-day type; moderately productive in central Florida and very productive in Louisiana, southern Mississippi, North Carolina, and Maryland; vigorous and erect. Resistant to five eastern U.S. races of the red stele causal organism.

Petrina.—A large-fruited strawberry suited for processing. Orig. in Rafz, Switzerland, by P. Hauenstein, Ag Baumschulen, CH-8197 Rafz. Parents unknown; introd. in 1990. Plant variety rights held by Promo-Fruit, Landstr. 42, CH-8197. **Fruit:** large; dark red; moderately firm; good flavor; fairly good shelf life; suited to processing; mid- to late season; low susceptibility to rots. **Plant:** short-day type; high yield; very vigorous; moderate to high susceptibility to powdery mildew; low susceptibility to root rots.

Polka.—A disease-resistant strawberry suited to processing. Orig. at CPRO-DLO Wageningen, Netherlands. Induka x Sivetta; introd. in 1988. Plant variety rights held by I.V.T. Wageningen. **Fruit:** medium size; dark red; medium to good firmness; fairly good shelf life; suited to processing and pick-your-own; mid- to late season; low susceptibility to rots. **Plant:** short-day type; moderate vigor; fairly dense growth; can have excessive fruit set. Low susceptibility to leaf diseases and root rots. Adapted to higher altitudes.

Primetime.—A midseason, disease-resistant, fresh-market strawberry adapted to the mid-Atlantic states. Orig. in Beltsville, Md., by G. Galletta, U.S. Dept. of Agriculture. MDUS 4377 (Sunrise x MDUS 3082) x Earliglow; cross made in 1978; selected in 1980; tested as MDUS 5069; introd. in 1995. **Fruit:** large; medium firmness; glossy scarlet external and pink internal color; pleasant, mild, slightly aromatic flavor; some *Botrytis* rot resistance. **Plant:** short-day type; vigorous; abundant runner production; productive on either light or heavy soils; adapted to matter rows or hill culture; tolerant to most leaf and stem diseases; resistant to five eastern U.S. races of red stele causal organism.

PS1-118.—A fresh-market strawberry producing fruit from April to October in central coastal California. Orig. in Watsonville, Calif., by S.D. Nelson, M.D. Nelson, and D.T. Schmida, Plant Sciences, Inc. Open-pollinated seedling of unknown parentage; selected in 1988; introd. in 1990. USPP 8205. **Fruit:** medium to large; firm; glossy, relatively dark red external and dark red internal color; medium conic; achenes above surface; excellent flavor; good shipping qualities; moderately susceptible to *Botrytis*; susceptible to flower thrip. **Plant:** short-day type; moderate chilling requirement; vigorous. Moderately susceptible to powdery mildew and two-spotted spider mite; tolerant to virus diseases occurring in California.

PS1 308.—A fresh-market strawberry producing fruit from mid-April to early September in central coastal California. Orig. in Watsonville, Calif., by M.D. Nelson, S.D. Nelson, and D.T. Schmida, Plant Sciences, Inc. Open-pollinated seedling of unknown parentage; introd. in 1991. USPP 8346. **Fruit:** relatively large; moderately firm; glossy, bright red external and light red interior color; medium to long conic; achenes at surface; good flavor; moderate holding quality; moderately susceptible to *Botrytis* rot; susceptible to flower thrip. **Plant:** short-day type; moderately high chilling requirement; vigorous. Moderately susceptible to powdery mildew, angular leaf spot, aphids and two-spotted spider mite; susceptible to crown rot and anthracnose.

Puget Reliance.—A high-yielding, virus-tolerant strawberry adapted to the Pacific Northwest. Orig. in Puyallup, Wash., by P.P. Moore, T.M. Sjulín, and C.H. Shanks, Wash. State Univ. Research Centre. WSU 1945 (complex parentage involving Totem, Linn, and the Del Norte clone of *Fragaria chiloensis*) x BC 77-2-72 (complex parentage involving Totem, Tioga, Cheam); cross made in 1983 by T.M.S.; selected in 1985 by T.M.S. and C.H.S.; tested as WSU 1988. USPP 9310: large size maintained throughout harvest season; moderately firm, glossy medium red external and medium red internal color; conic; recessed achene; calyx easily detached; flavor somewhat acid; adapted to processing; relatively susceptible to postharvest *Botrytis* rot; susceptible to anthracnose rot. **Plant:** short-day type; high yield; erect growth habit. Susceptible to leaf scorch; probably resistant to common leaf spot and powdery mildew; susceptible to black vine weevil and to obscure root weevil; reaction to red stele root rot unknown; highly tolerant to aphid-borne virus complex occurring in the Pacific Northwest but susceptible to aphid vector.

Saaid.—An early-ripening strawberry adapted to culture under polyethylene tunnels in Israel. Orig. in Bet Dagan, Israel, by E. Izsak and S. Izhar, Ministry of Agr., The Volcani Centre. Rachel x Douglas; introd. in 1991. USPP 7870. **Fruit:** large; firm; glossy medium red exterior and interior color; bi-conic to conic; achenes at surface; calyx adheres strongly; good flavor; season under tunnels from December to June. **Plant:** short-day type; high yield; vigorous; moderate runner production.

Selene.—A very high-yielding, fresh-market strawberry adapted to both mediterranean and continental climates in Europe. Orig. in Battipaglia, Italy, by Consorzio Italiano Vivaisti Co. Patented. **Fruit:** large size maintained throughout harvest season; firm; glossy, light red

exterior and orange red interior color; conic; achenes recessed; reflexed sepals; medium sweetness and medium to high acidity; good shelf life; ripens 2 days earlier than Chandler in mediterranean climate and 3 days earlier than Elsanta in continental climate. **Plant:** short-day type; very high yield; medium to strong vigor; upright habit; medium green leaves; flowers at the same level as leaf canopy; adapted to a wide range of growing conditions.

Sharon.—An extremely early-ripening strawberry adapted to culture under polyethylene tunnels in Israel. Orig. in Bet Dagan, Israel, by E. Izsak and S. Izhar, Ministry of Agr., The Volcani Centre. Rachel x Chandler; introd. in 1991. USPP 7881. **Fruit:** large; firm to very firm; medium glossy, dark red external and uneven red internal color; wedge to conic; achenes below surface; calyx adheres strongly; slightly acidic flavor; season under tunnels from November to April. **Plant:** short-day type; moderate to high yield; vigorous; moderate runner production.

Smadar.—An extremely early-ripening strawberry adapted to culture under polyethylene tunnels in Israel. Orig. in Bet Dagan, Israel, by E. Izsak and S. Izhar, Ministry of Agr., The Volcani Centre. Rachel x Dover A; introd. in 1991. USPP 7865. **Fruit:** large; firm; moderate gloss, red external and light red internal color; bi-conic or cylindric; achenes below surface; calyx adheres strongly; sweet flavor; season under tunnels from November to April. **Plant:** short-day type; high yield; vigorous; moderate to abundant runner production.

Splendida.—A large-fruited, early-ripening strawberry with good flavor. Orig. in Germany by H. Franz, D. Rohrmoos, DW-8061 Purthof. Munchner Kindl x H. Grande; introd. in 1980. Plant variety rights held by Maeder Samen, Moosgrasse 36, CH-3274 Buehl/Aarberg. **Fruit:** large to very large; glossy red; medium firm; very good flavor; early ripening; low susceptibility to rots. **Plant:** short-day type; very vigorous with long leaf petioles. Low susceptibility to leaf spot and to root rots.

Swede.—An early-ripening fresh-market strawberry producing fruit from April to October in central coastal California. Orig. in Watsonville, Calif., by H.A. Johnson, A.Q. Amado, and J.L. Espejo, Driscoll Strawberry Associates, Inc. Driscoll selections D.5.23 x B6.117; introd. in 1986; USPP 6191. **Fruit:** large; glossy, dark red interior and medium to light red interior color; mostly conic to globose conic; good flavor; susceptible to *Botrytis* rot and to rain damage. **Plant:** short-day type; moderate to high chilling requirement; moderate runner production. Susceptible to *Verticillium* wilt and crown rot; tolerant to viruses occurring in California.

Tethis.—A high-yielding, fresh-market strawberry adapted to mediterranean climates in Europe. Orig. in Battipaglia, Italy, by Consorzio Italiano Vivaisti Co. Patented. **Fruit:** very large; very firm; bright red exterior and medium red interior color; recessed achenes; large calyx with reflexed calyx; excellent flavor with well-balanced sugar : acid ratio; excellent shelf life; ripens in period between Parajo and Chandler. **Plant:** short-day type; very high yield; medium to strong vigor; upright growth habit; large flowers at the same level as leaf canopy; extended flowering period; tends to produce a second crop; widely adapted in mediterranean-type climates.

Thuriga.—A fresh-market strawberry producing firm fruit with an excellent flavor. Orig. in Switzerland by Haberli Ag Nursery. Belrubi x Maxim (syn. Gigantella); cross made in 1986; tested as 83-1-3; introd. in 1992. Plant variety rights held by Haberli Obst-und Beerenzentrum Ag, CH-9315 Neukirch-Egnach. **Fruit:** large; glossy red; firm; long conic shape; mid- to late-season ripening; good shelf life; aromatic flavor with balanced sweetness and acidity. **Plant:** short-day type; very vigorous with erect habit; Moderately susceptible to powdery mildew and leaf spot; some resistance to root and crown rots.

Winona.—A late-season, fresh-market strawberry adapted to the continental climate of Minnesota. Orig. in St. Paul, Minn., by J.J. Luby and G.J. Galletta, Univ. of Minnesota and USDA. Earliglow x MNUS 52 (Lateglow x MDUS 4616); cross made in 1985; selected in 1987; tested as MNUS 210; introd. in 1995. **Fruit:** large; medium to firm skin and firm flesh; scarlet external and medium orange-red to pink internal color; blunt-wedge to blunt-conic shape; large, showy calyx; achenes slightly raised; slightly aromatic flavor with good balance between sugars and acid; ripening season similar to Lateglow. **Plant:** short-day

type; high yield; winter hardy; large crown; moderate runner production. Resistant or tolerant to powdery mildew, leaf scorch and common leaf spot; tolerant to black root rot; resistant to five eastern U.S. races of red stele causal organism.

X13.—A fresh-market and processing strawberry adapted to central coastal and southern California. Orig. in Watsonville, Calif., by T.M. Sjulín, A.Q. Amorao, and J.I. Espejo, Driscoll Strawberry Associates, Inc. Driscoll selection Z2 x Joe Reiter; introd. in 1993. USPP 8970. **Fruit:** large to medium; firm; glossy medium red external and medium red to white internal color; wedge to smooth conic; achenes small and slightly raised above surface; good flavor; good shelf life; susceptible to anthracnose rot; adapted to freezing especially for Individual Quick Freeze; season from April to October in central coastal California and later than Chandler in southern California. **Plant:** short-day type; moderately high chilling requirement; abundant runner production. Susceptible to *Verticillium* wilt and angular leaf spot; tolerant to anthracnose, two-spotted mite and to viruses occurring in California.

INDEX OF VARIETIES DESCRIBED

(*Synonyms in italics*)

Abbott Thinsell HICKORY
Ademir PLUM ROOTSTOCK
Adesoto 101 PEACH ROOTSTOCK
Albatross CURRANT
Alkoopina RASPBERRY
Allgold RASPBERRY
Anacapa STRAWBERRY
Apple QUINCE
Arganche PEAR—EUROPEAN
Atlas PEACH ROOTSTOCK
Augustus CURRANT
Austin BLUEBERRY
Autumn Royal GRAPE
Avila STRAWBERRY
Balboa STRAWBERRY
Barton PECAN
Ben Alder CURRANT
Ben Connan CURRANT
Ben Lomond CURRANT
Ben Nevis CURRANT
Ben Sarek CURRANT
Ben Tirran CURRANT
Benihibari STRAWBERRY
Bereczki QUINCE
Bester PECAN
Best's Early PECAN
Big Red MAYHAW (Addendum)
Black Butte BLACKBERRY
Bladen BLUEBERRY
Blanka CURRANT
Bona CURRANT
Bonfire PEACH (Addendum)
Borner GRAPE ROOTSTOCK
Bradprune PLUM—ASIAN
Burkett Native PECAN
Burns BLACK WALNUT
Candy PECAN
Carezza STRAWBERRY
Cartcua STRAWBERRY
Cassa CURRANT
Castanera PECAN
Ceres CURRANT
Champion QUINCE
Chandler BLUEBERRY

Chanticleer BLUEBERRY
 Chetopa PECAN
 Chippewa BLUEBERRY
 Clermont BLACK WALNUT (Addendum)
 Columbia Red Anjou PEAR—EUROPEAN
 Commander STRAWBERRY
 Concorde PEAR (Addendum)
 Coogee STRAWBERRY
 Cooke's Jumbo QUINCE
 Cranz BLACK WALNUT
 Creek PECAN
 Crimson Seedless GRAPE
 Curtis PECAN
 Dapple Dandy PLUMCOT
 Darlibelle STRAWBERRY
 Darline STRAWBERRY
 Delbard Precocoe PEAR - EUROPEAN
 Delbard Premiere PEAR - EUROPEAN
 Delmas PECAN
 Desirable PECAN
 Detvan CURRANT
 Devore PECAN
De Zahar PEAR—EUROPEAN
 Dorit STRAWBERRY
 Douglas Balseg BLACKBERRY
 DOVine GRAPE
Duminie Mire PECAN
 E26 STRAWBERRY
 Early Rosa PLUM—ASIAN
EarlyBlush APRICOT
 Earlysweet RASPBERRY
 Ekmek QUINCE
 El-Tom BLACK WALNUT
 Eldora BLACK WALNUT
 Elida RASPBERRY
 Emerald Beaut PLUM—ASIAN
 Emily STRAWBERRY
 Emma K BLACK WALNUT
 Eris STRAWBERRY
 Eros STRAWBERRY
 Etrusca PEAR—EUROPEAN
 Eva CURRANT
 Fantasia BLACKBERRY
 Farleigh CURRANT
 Favorit CURRANT
 Favorite RASPBERRY
 Fayette-1 BLACK WALNUT
 Fayette-2 BLACK WALNUT
 Fertod 1 CURRANT
 Flavorella PLUMCOT
 Florika STRAWBERRY
 Football BLACK WALNUT
 Forkert PECAN
 Foxendown CURRANT
 Framita RASPBERRY
 Frel STRAWBERRY
 Frontenac GRAPE
 Frotscher PECAN
 Galante RASPBERRY
 Glen Yarra RASPBERRY
 Gloria Grande PECAN
 Golden Bliss RASPBERRY
 Grace STRAWBERRY
 Green Jade PLUM—ASIAN
 Greenriver PECAN
 Hay BLACK WALNUT
 Helena APRICOT
Highway 30 HICKORY
 Himbo Star RASPBERRY

Hougetsu PEAR—ASIAN
 Hron CURRANT
 Idea STRAWBERRY
 Jahns Prairie GOOSEBERRY
 Jingkejing GRAPE
 Jingxiu GRAPE
 Jingya GRAPE
 Jingyou GRAPE
 Jingyu GRAPE
 Jingzaojing GRAPE
 Johnson PECAN
 Joliette STRAWBERRY
 Jubilee BLUEBERRY
 Jubilee PECAN
Jumbo QUINCE
 K1 STRAWBERRY
Kallus PECAN
 Kanza PECAN
 Ken Sheehy STRAWBERRY
 Key Largo STRAWBERRY
 Kiowa BLACKBERRY
Klementinka PEAR—EUROPEAN
 Knox-1 BLACK WALNUT
 Komet STRAWBERRY
KS112 PECAN
 Kwik-Krop BLACK WALNUT (Addendum)
 Larson B-36 GRAPE
Larson D-12 GRAPE
 Latestar STRAWBERRY
 Lawrence-1 BLACK WALNUT
 Lawrence-2 BLACK WALNUT
 Legacy BLUEBERRY
 Limon QUINCE
 Little Giant BLUEBERRY
Lucana RASPBERRY
 Magnolia BLUEBERRY
 Malling' Greenfinch GOOSEBERRY
 Malling' Invicta GOOSEBERRY
 'Malling' Redstart CURRANT
 Major PECAN
 Majoral STRAWBERRY
 Malahat RASPBERRY
 Mara Des Bois STRAWBERRY
 Marascor STRAWBERRY
 Maraton CURRANT
 Mariah GRAPE
 Marquis GRAPE
 Mars STRAWBERRY
 Marve RASPBERRY
 McLeon PECAN
 Meco RASPBERRY
 Meech QUINCE
Meech's Prolific QUINCE
 Melrose PLUM—ASIAN
 Milcin STRAWBERRY
 Mindarie STRAWBERRY
 Mira STRAWBERRY
 Miranda STRAWBERRY
 Misty BLUEBERRY
 Moneymaker PECAN
Monstrueux de Vrania QUINCE
 Moore PECAN
 Mortti CURRANT
Mustafabey PEAR—EUROPEAN
 Navaho PECAN
Nellie PECAN
Niniane RASPBERRY
 NJA 53 APRICOT
 NJA 54 APRICOT

Nugget PECAN
 Nui BLUEBERRY
 OAC St. Clair STRAWBERRY
 Ofra STRAWBERRY
 Ohio BLACK WALNUT
 Orange QUINCE
 Otelo CURRANT
 Ozarkblue BLUEBERRY
Para de Zahar PEAR—EUROPEAN
Paragon PECAN
 Pax GOOSEBERRY
 Pearl River BLUEBERRY
 Pelican STRAWBERRY
 Pensacola Cluster PECAN
 Petrina STRAWBERRY
 Pineapple QUINCE
 Polar CURRANT
 Polaris BLUEBERRY
 Polka STRAWBERRY
 Portugal QUINCE
 Posey PECAN
 Price-Fleming PECAN
 Prilop of Lavaca PECAN
 Primetime STRAWBERRY
 Primus CURRANT
 Princess RASPBERRY
 PS1-.118 STRAWBERRY
 PS1 308 STRAWBERRY
 Puget Reliance STRAWBERRY
 Purdue 1 BLACK WALNUT
 Purdue 2 BLACK WALNUT
 Purdue 3 BLACK WALNUT
 Puru BLUEBERRY
 Rea QUINCE
Rea's Mammoth QUINCE
 Redpoll CURRANT
 Redwing CURRANT
 Reka BLUEBERRY
 Resa RASPBERRY
 Roodneus CURRANT
 Rubaca RASPBERRY
 Saa'id STRAWBERRY
Sakarnaia PEAR—EUROPEAN
 Salopek PECAN
 San Saba PECAN
 San Saba Improved PECAN
 Sauber BLACK WALNUT
 Schley PECAN
 Seker Gevrek QUINCE
 Selene STRAWBERRY
 Sharon STRAWBERRY
 Skookum Seedless GRAPE
 Smadar STRAWBERRY
 Smyrna QUINCE
 Sooke Seedless GRAPE
 Southern Home GRAPE (Addendum)
 Southmoon BLUEBERRY
Sovereign PECAN
 Sparks 127 BLACK WALNUT
 Sparks 147 BLACK WALNUT
 Splendida STRAWBERRY
 Stabler BLACK WALNUT
 Star BLUEBERRY
Steffek PECAN
 Storklas CURRANT
 Stuart PECAN
 Suaprive APRICOT
 Success PECAN
 Sumner PECAN
SunGem APRICOT
 Surprise BLACK WALNUT

Surprise PECAN
 Swede STRAWBERRY
 Tatran CURRANT
 Tekkes QUINCE
 Tethis STRAWBERRY
 Texas Prolific PECAN
 Texas Superberry MAYHAW (Addendum)
 Thomas BLACK WALNUT
 Thuriga STRAWBERRY
 Tippecanoe-1 BLACK WALNUT
 Traminette GRAPE
 Tri-Lite PLUMCOT
 Triple Crown BLACKBERRY
 Ubileen Gift PEAR—EUROPEAN
 USPP 2099 Pensacola Cluster
 USPP 4542 Purdue 3
 USPP 4543 Purdue 1
 USPP 4614 Purdue 2
 USPP 4954 Tippecanoe-1
 USPP 4955 Lawrence-2
 USPP 4964 Fayette-1
 USPP 4966 Knox-1
 USPP 4968 Fayette-2
 USPP 4971 Lawrence-1
 USPP 5485 Jubilee
 USPP 5911 McLeon
 USPP 6191 Swede
 USPP 6194 Columbia Red Anjou
 USPP 6231 Ken Sheehy
 USPP 6699 Nui
 USPP 6700 Reka
 USPP 6701 Puru
 USPP 7024 Commander
 USPP 7160 K1
 USPP 7171 Anacapa
 USPP 7228 Price-Fleming
 USPP 7522 E26
 USPP 7563 Darlibelle
 USPP 7566 Darline
 USPP 7598 Frel
 USPP 7701 Florika
 USPP 7861 Milcin
 USPP 7865 Smadar
 USPP 7869 Dorit
 USPP 7870 Saa'id
 USPP 7881 Sharon
 USPP 8035 Grace
 USPP 8069 Green Jade
 USPP 8083 Windy
 USPP 8205 PS1-.118
 USPP 8346 PS1 308
 USPP 8389 Tri-Lite
 USPP 8470 Flavorella
 USPP 8509 Bonfire
 USPP 8517 Mara Des Bois
 USPP 8598 Cartcua
 USPP 8649 Key Largo
 USPP 8745 Avila
 USPP 8746 Ofra
 USPP 8864 Melrose
 USPP 8912 Viking
 USPP 8913 Atlas
 USPP 8955 Early Rosa
 USPP 8969 Bradprune
 USPP 8970 X13
 USPP 9039 Larson B-36
 USPP 9040 Mariah
 USPP 9130 Balboa
 USPP 9162 Emerald Beaut
 USPP 9179 Hougetsu
 USPP 9192 Concorde

USPP 9254 Dapple Dandy
 USPP 9310 Puget Reliance
 USPP 9454 Southern Home
 USPP 9575 Borner
 USPP 9834 Southmoon
 USPP 9861 Kiowa
 USPP pending Marquis
 USPP pending Ozarkblue
 USPP pending Star
 Van Deman PECAN
 Van Deman QUINCE
 Vernon HICKORY
 Vertti CURRANT
 Viking ALMOND ROOTSTOCK
 Viola CURRANT
 Vranja QUINCE
 Wawi RASPBERRY
 Western PECAN
Western Schley PECAN
 Wilson HICKORY
 Windy BLUEBERRY
 Winona STRAWBERRY
 Witte van Huisman CURRANT
 X13 STRAWBERRY
Zaharoasa de Vara PEAR—EUROPEAN

ADDENDA AND REVISIONS TO PREVIOUS LISTS

BLACK WALNUT

Clermont.—Name was misspelled as Clermount (List 16).

Kwik-Krop (*Boellner*).—Name was misspelled as Stark Kwik-Krop (List 11).

GRAPE

Southern Home.—USPP 9454, issued 20 Feb. 1996 (List 37).

MAYHAW

Big Red (*No. 1 Big*).—Species is *Crataegus opaca* rather than *C. aestivalis* (3rd edition of book).

Texas Superberry (*Superberry, T.O.'s Superberry*).—Species is *Crataegus opaca* rather than *C. aestivalis* (3rd edition of book).

PEACH

Bonfire (*Tom Thumb*).—Originally named Tom Thumb. Name was changed during patenting process due to previous use of the name. However, name published by Patent Office for USPP 8509 was Tom Thumb rather than the correct name Bonfire (List 38).

PEAR

Concorde.—USPP 9192, issued 11 July 1995 to Plant Breeding Intl., Cambridge, England (List 37).