Table of Contents

1. Apples, Cultivar Evaluation
2. Apples, Disease Resistant
3. Crabapples, Ornamental Disease Resistant
4. Pears, Asian
5. Pears, European
6. Plums
7. Cherries
8. Peaches and Nectarines
9. Apricots
APPLE RESEARCH 1993
Washington State University
Mount Vernon WA 98273
G.A. Moulton, J. King, and R.A. Norton

The 1993 season saw a return to the typical weather pattern of the Puget Sound region, with many cool damp days at bloom time, and on into the late spring and summer. However, sufficient bee activity was present and the pollination of most cultivars (varieties) was not adversely affected. Ripening was delayed somewhat compared to the 1992 season with its unusually high heat levels, and in some instances (notably, Jonagold and its strains) good color did not develop until late in the season. However, many varieties that suffered excessive sunburn and water core in 1992 responded much better to the lower heat levels, and the overall performance of all apple varieties was good. Weather at harvest was excellent, and though some late varieties remained on the tree until early November they continued to ripen well.

Two McIntosh-type introductions that first fruited in 1992, Redmax and Acety Mac, continued to perform well, particularly the latter which seems at this point to have slightly better flavor and storability characteristics. Ginger Gold, an early Golden Delicious type, is not as impressive here as in eastern Washington due to poor finish and short storability. Two new red sports of Elstar, Daliter and Daliest, were very impressive both for their color and for their bright, sprightly flavor. A golden russet type first known in the early 1800s, Reinegris du Canada (Canada Gris), had its first fruit this year; although the fruits size well and are not unattractive, the variety may prove too late ripening for this area.

A number of varieties showed up as consistently good performers. Empress (NY 651) is a productive McIntosh type in the early season with excellent flavor when eaten off the tree, though storage life is short. Sunrise, newly introduced from the Summerland B.C. breeding program, is another early variety with home orchard potential. Crosses of Cox’s Orange Pippin performed very well this season: Alkmene in early September, Fiesta and Elstar in late September, are all productive, high quality apples with wide taste appeal. Both Royal Gala and Scarlet Gala would have benefited from harder thinning, but their flavor was not affected. In the late season an old standard, Melrose, stood out; mature trees, well pruned for maximum sun exposure, produced large, colorful fruits of excellent flavor both fresh and in cooking, suitable for long storage.

Notes on the performance of specific varieties appear below, listed in harvest order within each category (1993 harvest dates in parentheses):

Established Cultivars:

Williams’ Pride (July 28-August 3) Moderate-heavy set, size medium, color attractive wine red blush 60-100% over yellow, very good flavor, subacid to sweet; firm flesh holds up well for early apple but flavor declines rapidly after 4 weeks. Scab immune.

Sunrise (August 16-20) Moderate-heavy set, size above medium, color not as good as in 92 but flavor very good, sweet and refreshing; shelf life and storability not the best but flavor holds up well, store not over 4-6 weeks.

Earligold (August 20) Heavy set, size medium to large, color ok, some scab and russet, flavor mild subacid, best not stored beyond 6 weeks post-harvest.

Red Gravenstein (August 20) Moderate set, size variable medium to large, color a bit dull, dappled, flavor good, juicy, subacid; keeps for 2 months.

Empress (NY 651) (August 20) Heavy set on M9 rootstock, most fruit small, very good wine red color, excellent flavor fresh off tree, retains flavor in storage but flesh softens after 6-8 weeks.

Redfree (August 20) Moderate set, size above medium, good color but highly colored fruits tend to
become spongy, flavor good fresh off tree; keeps firmness and flavor well if not stored too long - maximum storage 1 month. Some bitter pit.

**Mott Pink**  
(August 20) Heavy set, size slightly below medium, uniform, yellow color with pale pink underblush when ripe, pink-tinted flesh, lively tart flavor; a nice novelty apple for home gardeners, holds up well for 6-8 weeks post-harvest.

**Novamac**  
(August 25) Heavy set, size medium, uniform, color acceptable with some russetting and sunburn, keeps flavor well in storage but should not be held longer than 2 months. Disease resistant.

**Dayton**  
(August 30) Moderate set, size above medium, fairly uniform; color good, nice red orange stripe over yellow; firm flesh, very sweet and flavorful just off tree but not for long storage; some early drop, bird damage. Scab immune.

**-Prima**  
(August 30) Moderate set, size medium, occasionally larger, color variable 50-95% bright red over yellow, best colored fruits turn soft quickly; mild subacid flavor, acceptable but far from best of the scab immune varieties.

**Chehalis**  
(August 30 - September 6) Few, large fruits on young trees, typical of variety, crisp juicy flesh, somewhat melting, pleasant subacid flavor. Scab resistant, some mildew.

**Alkmene**  
(September 8) Moderate-heavy set on rather compact trees, size medium, fairly uniform, nice yellow and orange color especially in sun exposed areas, flavor excellent, lively subacid, firm dense flesh, keeps up to 2 months; no scab or mildew.

**Redcot**  
(September 10) Red sport of Cortland, moderate set, size above medium to large, good wine red color, holds on tree better than standard Cortland, little pre-harvest drop, flavor good, subacid to sweet, nice midseason Mac type.

**Honeycrisp**  
(September 8-16) Heavy set, uneven ripening, size quite variable, most large but some below medium, early selective pick for best color, signs of some bitter pit especially in the largest fruit; flavor was good, flesh crisp and juicy, scald appearing after 6 weeks' storage.

**Fiesta**  
(September 16-20) Heavy set, size variable, most above medium, color quite variable, selective pick by color, second picking improved in color and flavor, very good flavor, subacid to sweet, no scab, some russet.

**Tsugaru, Homei**  
(September 16) Moderate set, size medium and above, excellent red color, some russet, crisp, juicy, flavor mild, sweet, seems better adapted than standard and Natsuka strains.

**Cox's Orange Pippin**  
(September 16) Moderate set on low, non-vigorous tree, size below medium, fairly uniform, dull color typical of Cox, firm dense flesh with rich subacid flavor.

**Arlet**  
(September 20) Moderate-heavy set, size medium and above, very good color but 70-80% of fruit heavily russeted; flavor good, lively, subacid to sweet.

**Bramley's Seedling**  
(September 20) Heavy set, size quite variable, most large to very large; color ok, typical Bramley red-yellow stripe, very firm, juicy, flavor tart for fresh eating, excellent culinary.

**Elstar**  
(September 20-28) Set variable on different rootstocks (very heavy on M9; moderate on M26 and M7), most fruits medium size, color good, very crisp, juicy, excellent flavor in the subacid to tart range, mellows somewhat in storage.
Freyberg  (September 24) Heavy set, size medium or slightly below, good solid yellow color, some light russet, excellent flavor, juicy and sweet.

Egremont Russet  (September 24) Moderate set, size medium, considerable sunburn on exposed fruit, also bitter pit, especially on ripest fruit; dark yellow skin netted with russet, very firm dense flesh, flavor subacid to sweet.

Karmijn de Sonnaville  (September 28) Moderate set, fruit size and color both highly variable, most fruit medium size or slightly larger, color typically dull brick red over green. Flavor strongly acid right off tree but sugar levels develop after storage - definitely a gourmet apple may not appeal to everyone. Some bitter pit and sunburn but much less than in 92.

Gala, Royal  (September 28) Heavy set, some areas of tree could have used harder thinning, most fruits medium size or only slightly below; color excellent in sun exposed fruit, acceptable on the rest, excellent flavor, sweet; little scab.

Shay (MacShay)  (September 28) Moderate-heavy set on vigorous trees, size medium, uniform, color variable but even poorly colored fruits have acceptable flavor, mildly subacid to sweet; tends to pre-harvest drop, scab immune.

Winterstein  (September 28) Moderate set, size variable, most large; color and appearance similar to Gravenstein, yellow-green with orange stripe, firm and crisp, flavor subacid to tart, mostly culinary uses.

Gala, Scarlet  (October 1) Heavy set on all trees, size below medium, a few larger, selective pick for color and size improved size of last pick October 9, color was slow to develop but most color was good by harvest time, and flavor was excellent, dense, juicy, and sweet.

Florina  (October 4) Moderate set, size medium, color rather poor, pale pinkish red - probably should have waited for better color to harvest, excellent finish, flavor sweet, on the bland side, hangs well on tree; scab immune.

Himekami  (October 4) Moderate-heavy set, size medium or slightly above, color variable but most over 80% red, very firm and crisp, sweet, slight flowery aftertaste.

Liberty  (October 6) Moderate set, size medium or below, slight pre-harvest drop, color not as good as 92 but quality very good, juicy and sweet; scab immune.

Jonagored  (October 6) Heavy set, size above medium to large, color was slower to develop than in 92 but was better than other Jonagold sports; flavor was affected, and specimens tested after color was well developed were sweeter, overall better quality.

Boskoop, Red  (October 7) Schmitz Hubsch strain, moderate set, size variable, most large to very large, red color 60-80%, some russet especially in L block; dense firm flesh, tart flavor, excellent culinary, good keeper.

Jonafree  (October 8) Heavy set, size medium, color variable 50-90% red stripe, crisp, flavor subacid to tart, lightly, may not fully ripen in cooler areas.

Braeburn  (November 7) Moderate to heavy set, fruit size medium, acceptable color and flavor only at very end of season, one of the best when well ripened; probably too late in most areas, but M9 rootstock and trellis training would improve its chances.

Fuji, Standard  (November 12) Moderate to heavy set, size medium, color good only after hanging very late
on tree, flesh crisp, sweet, acceptable quality but not really suited to conditions here.

Not fully evaluated:

**NJ 107**  
(August 3) Heavy set, size variable, most medium, good smooth finish, attractive color, dense firm flesh, good flavor, sweet and flowery, stores better than other early NJ selections, maximum storage 6-8 weeks, may develop off flavor if stored too long.

**NY 652**  
(August 20) Heavy set on M9 rootstock, size medium to small, some pre-harvest drop, good red color, very good flavor, retains flavor in storage and is firmer than Empress (NY 651); storage limit 6 weeks. Check with New York as to its future status.

**NJ 99**  
(August 25) Heavy set on vigorous tree, size medium to large, slight scab, otherwise good smooth finish, attractive yellow skin, flavor slightly tart fresh from tree, storage life 6 weeks, acid drops rapidly at longer storage, flavor becoming bland.

**Redmax**  
(August 25) Moderate-heavy set on young trees, size slightly below medium, uniform, excellent wine red color, little russet or scab, flavor on the tart side but pleasant, keeps good flavor in storage, good for 2 1/2 months.

**Ginger Gold**  
(August 30) Moderate set on young trees, first fruiting, size medium to large, distinct conic shape, yellow with occasional 20% stripe around cavity, good flavor, mildly subacid, crisp dense flesh, tough skin; maximum storage life 6 weeks; better than Earlgold but neither is at its best in western Washington conditions for commercial purposes.

**Aroma**  
(September 1) Heavy set, size medium to large, color variable, most are 50-80% pale pink over green even when ripe, little scab or russet; flavor mild, refreshing, tends not to hold up in long storage, quality not as good as in 92.

**Golden Supreme**  
(September 8-12) Moderate-heavy set on young trees, first fruiting, size medium to large, pronounced conic shape, attractive yellow color with slight coppery blush on some, not highly flavored but refreshing, evaluate again in 94.

**Senshu**  
(September 16) Heavy set, size variable, most medium, color rather poor, nice finish on most, only slight russet, no scab; flavor mild, subacid to sweet.

**Himekami**  
(September 16) Moderate set, size medium, some very small, color variable; flavor ok but not outstanding, tends to sweet and bland, no scab but a lot of russet.

**Early Dawn**  
(September 16) Heavy set on small young tree, size medium or slightly larger, good color, firm very juicy flesh, mild subacid flavor, considerable russet, some scab, evaluate again in 94.

**Compact Mac**  
(September 24) Wijcik strain, heavy set, growth strongly upright with small side branches, size medium, uniform, attractive color, very good flavor, little scab; tree well suited to small garden spaces.

**Daliter**  
(September 28) Red sport of Elstar, heavy set on young trees, first fruiting, size medium or above, fairly uniform, excellent color, good lively subacid flavor, some russet but not excessive.

**Gala, Fulford**  
(September 28) Moderate-heavy set on young trees, first fruiting, size medium or slightly below, excellent color, 90-100% even blush, little sunburn or russet, dense flesh and sweet rich flavor typical of Gala.
Golden Mack  (September 28) Moderate set, first fruiting, slow to begin fruiting (planted 1987), size medium, color not outstanding, broken red-orange stripe 80-90% over yellow, juicy and crisp but flavor on the bland side, check again in 94.

Virginia Gold  (September 28) Possibly not true name; heavy set on small young trees, fruit size above medium, fairly uniform, red-orange blush and faint stripe 60-80%, very firm flesh, mildly subacid; check with source for description in 94.

Tydeman's Late Orange (September 29) Moderate set on young tree, first fruiting, size below medium, fairly uniform, shape similar to Cox, color darker and more even, dense firm flesh with strong subacid flavor; check again in 94.

Jimmi (Tuell sdlg) (September 29) Heavy set especially on trellis row, size above medium, very good all over red color, attractive, smooth finish; mild pleasant flavor, subacid to sweet, but not outstanding.

NY 617  (September 29) Moderate-heavy set, size large to very large, bright color, red-orange stripe over yellow, flesh crisp and very firm, good sweet-tart flavor; too large for eating out of hand, NY recommends for processing, test in 94 for culinary use.

Dalie (October 4) Red sport of Elstar, moderate-heavy set on young trees, first fruiting, size medium, fairly uniform, excellent all over wine red color; very good lively sweet-tart flavor, better than Dalier at first impression; promising.

NJ 90  (October 4) Heavy set, size slightly below medium, attractive wine red skin with slight pale bloom, crisp, very juicy, flavor acceptable but not top rank.

NJ 100  (October 4) Heavy set, size medium and above, fairly uniform, excellent even yellow color, good finish, very little russet, crisp and juicy, good flavor; check with NJ on future status.

Macfree  (October 8) Moderate set, size medium, dark red color with typical pale bloom, very juicy, crisp, good flavor, mildly subacid, refreshing. Check again in 94.

SunCrisp (NJ 55) (October 13) Moderate-heavy set, size medium or above, color and finish good, very firm and crisp, flavor on the tart side though starch tests fully mature; may be too late here for best quality fruit.

Delbard Jubilee (October 20) Heavy set, size above medium, fairly uniform, very good color although color was later developing than in 92, very crisp and juicy, sweet-tart flavor, refreshing; some sunburn, russetting.

Reinette Grise du Canada (Canada Grise) (October 20) Moderate-light set on young trees, first fruiting, size above medium, round to flattish in shape, attractive all over russet over light golden-brown skin, very dense firm flesh, subacid to tart, may mellow out in storage, check again in 94.

GoldRush  (October 30) Moderate set, size highly variable, some quite small, yellow skin occasionally splashed and blushed pinkish red, poor finish, unattractive, flavor variable from subacid to tart, probably too late ripening for here. Scab immune.

Enterprise  (October 30) Moderate-heavy set, size medium to large, excellent overall wine red color 90-100% in all fruits; very firm, crisp and juicy, very good sweet flavor with lively sparkle; may be too late in some years but has done well so far, promising. Scab immune.

AA 18  not yet fruiting
AA 49
not yet fruiting

AA 62
not yet fruiting

Provisional (final year - probable discard):

NJ 104
(July 30) Moderate set on mature trees, size medium, wine red color tends to bleed into flesh, flavor refreshing, subacid, storage life very short, not more than 6 weeks. Acceptable for "first-early" apple.

NJ 116
(August 3) Heavy set, size medium or slightly above, fairly uniform, good flavor off tree, subacid to tart, but does not keep more than 4-6 weeks, more russet than NJ 107.

Red June
(August 3-15) Heavy set, medium size, ripens over extended period, best flavor in fruits with some red color but not 100%, highly colored fruits are soft and mushy, stores one month.

Discovery
(August 3) Moderate set on non-vigorous tree, size variable, most slightly below medium, excellent color and lively flavor; bird damage, dry cracking about 20%, stores less than 4 weeks.

AA 44
(August 9-13) Heavy set on small young tree, size medium to large, attractive orange-red stripe 70-100% over yellow, roundish to oblate, cream flesh, firm, crisp, aromatic, on the tart side fresh from tree; storage poor, scald and internal breakdown, evaluate in 94.

Cascade
(August 20 - September 1) Moderate set on small trees, size medium and above, ripening over extended period, fruits tend to drop before fully colored; attractive red stripe over yellow, juicy, rather melting flesh, mild refreshing flavor. No commercial potential, little to recommend it.

NY 162
(August 25) Heavy set, size variable, most large to very large; color variable, best colored fruit are soft in texture, very good flavor holds up in storage 4-6 weeks, very juicy but too big and soft for dessert uses. Check with New York as to future status.

Michinoku
(August 30) Heavy set, size below medium, uniform, 90-100% color but unattractive dull brick red, lot of russet, little scab, some pre-harvest drop, flavor mild and sweet off tree, quickly becoming bland in storage, not the best in its season.

NJ 109
(September 1) Heavy set, size above medium, good yellow color but some russet, flavor not outstanding, mildew rather bad.

Korallo Cox
(September 1) Heavy set, small uniform fruit, not well thinned, overall color 80-100% but not very attractive, dull red, considerable russet; firm dense flesh, good rich flavor, general habit superior to Queen Cox but neither is very successful.

Queen Cox
(September 8) Moderate set, size medium or slightly above, tree not highly vigorous, color rather dull, considerable russet, some dry cracks; firm dense flesh, fair flavor, but not worth keeping compared to Fiesta.

Dexter
(September 8) Moderate set, size very large (biggest apples on station), green, lumpy, unattractive, bland subacid flavor, possible value as culinary, or as novelty due to large size.

NJ 112
(September 16) Moderate set, fruit small, good yellow color, nice finish, flavor mild subacid, not outstanding; slight russet and scab.

Hubbardston Nonesuch
(September 16) Heavy set on spreading, non-vigorous tree, fruit size medium, somewhat
variable; color dull, unattractive, firm crisp flesh, flavor subacid to tart; old variety, fully evaluated, no commercial potential.

Opalescent  (September 16) Moderate set on mature, non-vigorous tree, size variable, most above medium, occasionally large, good red color especially on sun exposed fruit, crisp and juicy, flavor subacid; old variety, fully evaluated, no commercial potential.

Empire  (September 24) Moderate-heavy set on all trees, size medium or occasionally below, color ok, flavor acceptable but inferior to eastern Washington, scab susceptible.

NY 674  (September 24) Heavy set, size medium and above, excellent color, bright red and orange stripe, very attractive, flavor good, sprightly subacid, little scab; check with New York to determine its future status.

Elan  (September 24) Heavy set, size large, very attractive, good color, very juicy crisp texture but flavor is bland, mediocre.

Sayaka  (September 24) Moderate-heavy set on very vigorous tree, size large to very large, good color especially in sun exposed areas, good flavor, sweet, juicy. Too large for commercial dessert uses.

Sweet Sixteen  (September 29) Moderate set, size somewhat variable, most above medium, some sunburn but much less than in 92, very firm flesh, sweet, anise flavor hardly noticeable this year; no commercial potential, flavor not to the general taste.

Lyssgolden  (September 29) Heavy set, size medium and above, Golden Delicious type, occasional pink blush on exposed fruit, some russet and scab; crisp, juicy, flavor acceptable but not the best among Golden Delicious types tested here, same scab problems.

Russet King  (September 29) Light set on young trees, size medium or above, much better appearance than in 92, no malformed fruit and few dry cracks, shape flattish to round, even 100% russet over golden-brown skin, firm crisp flesh with good flavor, sweet-tart; check again in 94.

Dulcet  (October 4) Moderate set, size medium or slightly above, good color, dark wine red with conspicuous pale dots, some russet, not severe; flavor mediocre to poor, excessively sweet.

Yoko  (October 4) Heavy set, lots of very small fruit, poorly thinned, color highly variable, unattractive, flavor mediocre.

Orin  (October 4) Moderate-heavy set, very heavy on M7a, size below medium, nice even color, some russet, juicy, flavor mildly subacid; size and flavor both inferior to eastern Washington specimens.

Shamrock  (October 4) Moderate-heavy set, fruit size below medium, fairly uniform, green rather than yellow skin, quite tart though starch test shows full ripeness, not well adapted here.

Merton Russet  (October 6) Moderate set, fruit size medium, uniform, color rather unattractive, dull brick red with netted russet, rough finish, dense chewy texture, strong subacid flavor; for connoisseur tastes or makers of hard cider.

Swaar  (October 6) Misnamed as "Stearns", moderate-heavy set on vigorous trees, size medium or slightly above, rough russeted finish, very firm flesh, mild subacid flavor.

Spigold  (October 7) Heavy set, size large to very large, color red-orange broken stripe over dull yellowish green, firm crisp flesh, mild subacid, acceptable flavor but not especially well suited to this area.
Golden Noble  (October 7) Moderate set, size above medium, some large, rather irregular shape, russetting, very crisp, flavor subacid to tart, possible culinary.

Cornish Gilliflower  (October 7) Light set, sprawling loggy tree, size medium, color unattractive, dull purplish red, flavor subacid, acceptable but mediocre, a collectors' item but no more.

Nova EasyGro  (October 8) Moderate set, size medium or slightly above, color unattractive, dull brick red over greenish yellow, tends to sunburn where exposed; flavor acceptable but far from best, disease resistance its only strong point.

Keepsake  (October 8) Heavy set, size medium or above, poor color, pale pinkish red over green, very hard and crisp but sweetish and rather bland in flavor, fruity aftertaste disagreeable to some; good keeper.

Discard:

NJ 103  (July 25) Moderate set on mature trees, size medium, ripens somewhat unevenly, red color bright, attractive, best-colored fruits become spongy, flavor rather tart, ok fresh from tree but no storage life.

NJ 96  (July 30) Heavy set on mature trees, size small, flavor rather bland, acidic, ripens unevenly; no skin, light russet; mediocre quality, un promising.

Geneva Early  (August 3) Moderate to light set, size variable, above medium; color poor, some preharvest drop, flavor acceptable just off tree but on the soft side, does not keep.

Devonshire Quarrenden  (August 4) Moderate set on long whippy branches, all fruit small, very bad sunburn; "five minute" apple, softens quickly, strong pleasant apple aroma and flavor but terribly mushy, no storage life.

July Tart  (August 9) Heavy set, size medium to small, ripens unevenly, pre-harvest drop, irregular lumpy shape, greenish yellow skin, greenish flesh, acidic, bland, spongy; storage 8 weeks or less.

NJ 105  (August 13) Heavy set, size highly variable; pale yellow, conic to long conic shape, pronounced lobes, creamy white flesh rather bland but crisp and juicy; develops scald in storage, flavor goes off quickly.

Nebuta  (August 20) Very heavy set, most fruit small, not thinned, color attractive dark red, flavor bland, mediocre, scab severe.

BC 8SE-9-70  (August 20) Heavy set, good size, excellent bright red stripe color, good flavor fresh off tree, dense spongy texture, declines rapidly in storage, keeps less than 1 month. No potential, unlikely to be introduced by Summerland.

Aalmo sdg.  (August 20) Heavy set, size medium and below, nice yellow color but considerable russet, very firm flesh, flavor rather bland, short storage life, no potential for introduction.

NJ 109  (August 25) Moderate set on highly vigorous tree, size medium to large, less attractive than NJ 99, dappled green spots over yellow, flavor too tart, storage 6-8 weeks maximum.

Benham  (August 25) Moderate-heavy set, size medium, distinctive flatish shape, yellow skin, not especially attractive; flavor acceptable fresh off tree but declines quickly in storage.

Duchess of Oldenburg  (August 30) Moderate set on small, runted-out tree, size medium, variable ripeness and
color, most have 60-80% red stripe over yellow, riper fruits tend to drop; little scab or russet. Flavor on the tart side, some scald, stores 4-6 weeks, can't compete with Gravenstein in its season, fully evaluated.

**BC Red sdlg.** (September 1) Heavy set, size medium and above, very good color, 100% dark red, similar appearance to Red Delicious, stem cracks on some, light scab and some russet; bland flavor, mediocre. Might perform better in higher heat area.

**Honey** (September 1) Moderate set, size very large, unattractive, yellow green color, 40-60% fruits with bitter pit, flavor sweet but bland, water core in some.

**NJ 56** (September 16) Heavy set, size medium, fairly uniform, excellent bright red color, very attractive, nice finish, crisp juicy flesh but too tart for most dessert uses; little russet, no scab.

**Davies** (September 16) Heavy set, fruit size medium, uniform, nice red color, good finish, flavor subacid to tart, not outstanding; little scab, no russet, fully evaluated.

**Blenheim Orange** (September 16) Moderate set, size above medium, poor color, dull reddish stripe over greenish yellow, quality mediocre.

**Glocken** (September 16) Moderate set on small tree, size medium, distinct oblong shape, solid green skin; flavor subacid to tart, too sharp for most tastes.

**Kent** (October 7) Moderate-heavy set, fruit size medium or slightly above, dull orange red color unattractive, flavor mediocre, late.

**Ortley** (October 7) Heavy set, size above medium to large, greenish skin, juicy, crisp, subacid to tart; old variety, primarily for culinary use, fully evaluated.

**Rhode Island Greening** (October 8) Heavy set on mature, non-vigorous tree, size above medium to large, solid greenish-gold color with no blush or stripe; flavor subacid to tart, culinary use only, old variety, fully evaluated.
DISEASE RESISTANT APPLE RESEARCH 1993
Washington State University
Mount Vernon, WA 98273
G.A. Moulton, J. King, and R.A. Norton

This planting of disease resistant apples was begun in 1990 with cultivars and selections representing the widest available selection from the work of apple breeders in the United States and elsewhere. This is the most comprehensive single-site planting of disease resistant apples in the state, and provides an opportunity to observe the performance of these varieties in the disease-prone environment of western Washington.

We have been fortunate in receiving the support of the Western Cascade Fruit Society and the Western Washington Tree Fruit Research Foundation to maintain this planting, collect relevant data on the different varieties and selections, and make the results available to interested persons. We will be adding some of the newer advanced selections in 1994, that may prove well adapted to our region. So far the most promising varieties in our trial are Williams’ Pride, a very early ripening dark red apple with very good flavor and firmness, though not suited for long keeping, and Enterprise (Coop 30), late ripening, also dark red, very firm and of excellent quality especially after about a month in storage. Two selections from the Geneva, NY breeding program also scored high for flavor: NY 74828-12 and NY 65707-19. We will keep in contact with the research station there to see if either is being considered for introduction. Liberty still looks good, as does Chehalis.

The 1993 harvest produced sufficient fruit from most of the trees two years and older to conduct evaluations of fruit quality and harvest maturity. In many cases there was enough fruit to hold a preliminary evaluation of storage length and quality. Productivity of some trees was limited or nil due to damage caused over the winter of 1992-93 by rodents destroying much of their roots and bark. About 20% of the trees were seriously damaged and several were killed. Replacements where necessary will be added in spring of 1994. In contrast to 1992, the summer of 1993 was unusually cool and cloudy, with considerably lower heat units than the previous year. However, the weather improved at harvest time, with clear sunny days and cool nights providing good conditions for late ripening varieties. Some varieties, such as Florina, were slow to develop good color even after reaching the stage of normal harvest maturity. After harvest the fruit was placed in cold storage and taken out at intervals for evaluation; the results where relevant are included in the notes on each specific apple. Varieties and selections are listed in harvest order within each category, with the date of 1993 harvest noted in parentheses:

Established Cultivars:

Redfree (August 20) Moderate set, size above medium, good color but highly colored fruits tend to become spongy, flavor good fresh off tree; keeps firmness and flavor well if not stored too long - maximum storage 4-6 weeks. Some bitter pit.

Novamac (August 25) Heavy set, size medium, uniform, color acceptable with some russetting and sunburn, 60-80% red over yellow-green, pale blue bloom is typical; keeps flavor well in storage but tends to soften, should not be held longer than 2 months.

Prima (August 30) Moderate set, size medium, occasionally larger, color variable 50-95% bright red over yellow, best colored fruits turn soft quickly; mild subacid flavor, acceptable but far from best of the immune varieties.

Chehalis (August 30-September 6) Few, large fruits on young tree, typical of variety, crisp juicy flesh, somewhat melting, pleasant subacid flavor. Good natural resistance to scab, mildew susceptible.

Shay (MacShay) (September 28) Moderate-heavy set on vigorous trees, size medium, uniform, color variable 50-90% red over yellow-green but even poorly colored fruits have acceptable flavor, mildly subacid to sweet; tends to preharvest drop especially this year when fruit was slow to color.

Liberty (October 6) Moderate set, size medium or somewhat below, slight pre-harvest drop, red color
not as good as 92 but quality very good, juicy and sweet, stores about 3 months.

**Jonafree**

(October 8) Heavy set, size medium, color variable 50-90% red stripe over yellow-green; crisp firm flesh, lively subacid to tart flavor; may not fully ripen in cooler areas.

**Promising:**

**Williams' Pride** (July 28-August 3) Moderate-heavy set, size medium, color attractive wine-red blush 60-100% over yellow, very good flavor, subacid to sweet; firm flesh holds up well for early apple but flavor declines rapidly after 4 weeks. Best of the early season.

**NY 74828-12** (August 30) Heavy set, size medium and below, color variable 50-90% red, best with good sun exposure; firm, juicy, very good flavor keeps well for early apple, though flesh begins to soften after 3 months. Check with NY to see if it is candidate for naming/introduction.

**NY 65707-19** (October 1) Moderate set, size medium, fairly uniform, nice shape, finish, and color, allover dark red; firm, juicy, flavor very good, lively subacid, storage good but should not extend beyond 3 months or flesh begins to soften. Check with NY to see if it is candidate for naming/introduction.

**Enterprise** (October 30) Moderate-heavy set, size medium to large, excellent overall wine red color 90-100% in all fruits; very firm, crisp and juicy, good sweet flavor with lively sparkle, may be too late in some years but has done well so far.

**Needs Further Evaluation:**

**NY 66305-139** (August 5) Moderate set, size variable, most medium; very good color, 80-100% red stripe over light yellow with pale bloom, refreshing flavor, mildly subacid, not for storage beyond 4-6 weeks.

**Dayton** (August 30) Moderate set, size above medium, fairly uniform; color good, nice red-orange stripe over yellow; firm flesh, very sweet and flavorful just off tree but not for long storage. Some early fruit drop, bird damage.

**NY 66305-289** (August 30) Light set, size large, very good color, attractive clear red, firm juicy flesh, flavor is a bit tart fresh from tree, improves in storage, fruits store well until after Christmas, then begin to soften.

**Coop 28** (August 30) Moderate set, extremely variable size and shape, most fruit medium size, about 40% have pronounced flattish shape; color good, similar to Gale, attractive; good flavor fresh from tree, flesh remains very firm and crisp even after 4 months storage but flavor declines; probably best not kept over 3 months.

**PSER-11T-27** (August 30) Heavy set, size medium and above, variable, color yellow with frequent pinkish blush, finish russeted, unattractive; flavor acceptable at harvest but declines in storage, bland and soft after 3 months.

**NY 75441-67** (September 16) Moderate set, size above medium to large, good color, flavor acceptable but not outstanding at harvest, flesh remains firm in storage but loses flavor, becoming dry.

**NY 75413-30** (September 16) Moderate to light set, rather leggy trees, size large, excellent overall dark red color, netted russet on some, very irregular shape, strongly ribbed; flesh very firm, crisp, flavor
good, mild subacid, stores well, still acceptable quality at 3 months.

**NY 7541-1**
(September 16) Moderate set, size medium, very uniform in size and shape, very good color, dark purple-red with heavy bloom, like McIntosh; firm, very juicy, crisp, lively subacid flavor keeps very well though beginning to soften after 4 months storage.

**Coop 25**
(September 24) Moderate to light set, size above medium, color unattractive dull brick red striped over yellow, but very firm and juicy with excellent texture and flavor after more than 3 months storage. Worth further evaluation for non-commercial growers.

**HCR-14T-125**
(September 24) Moderate set, size medium-large, color unattractive, patchy russet over yellow, with red-orange blush to 25%; very hard and crisp, excellent sweet-tart flavor, keeps very well over 3 months. Unattractive but excellent eating, worth continued trial.

**PAR-4T-215**
(October 1) Moderate set, size medium to small, unattractive color, dull dark brownish red, rather dry skin tends to become pitted; very hard dense greenish flesh, flavor subacid to tart. No commercial potential but possible home garden, useful in breeding program(?).

**NY 74840-1**
(October 1) Moderate set, size medium large, rather flattish shape, very similar to Cortland, color good, flavor good at harvest but does not hold well in storage, internal breakdown noted by January. Try slightly earlier picking in 1994, with Jonamac.

**Florina**
(October 4) Moderate set, size medium, color rather poor this year, pale pinkish red - probably should have waited for better color before harvesting. Excellent finish, flavor sweet, on the bland side, hangs well on tree. Better performance in warm sunny sites.

**Macfree**
(October 8) Moderate set, size medium, dark red color with typical pale bloom, very juicy, crisp, good flavor, mildly subacid, refreshing. Check again in 94.

**NY 61345-2**
(October 8) Moderate-heavy set, size above medium, attractive overall dark red color, similar to Liberty but generally larger, flavor refreshing, mild subacid, crisp flesh tends to soften in storage.

**NY 61343-1**
(October 8) Moderate set, small, fairly uniform fruit, pink-orange blush/stripes 20-50% over yellow, flavor good at harvest, flesh soft and breaking down at 3 months, needs further evaluation.

**NY 73334-35**
(October 8) Moderate set, size medium and below, long conic shape, rather irregular, color ok, flavor acceptable at harvest but becomes winey, breaking down after 3 months storage. Susceptible to bitter pit.

**NY 73334-57**
(October 8) Very few fruit, trees damaged by rodents, insufficient for full evaluation. Color good, overall dark red, available specimens stored well. Check again in 94.

**Coop 29**
(October 8) Recheck in 1994. Tree or fruit specimens mislabeled, specimens not true to description in 1992, or in available literature.

**CMR-4T-18**
(October 8) First fruiting, moderate set, small fruit, attractive overall red color, mildly subacid flavor, refreshing, flesh getting soft after 3 months storage, evaluate earlier in 94.

**CLR-13T-45**
(October 8) Moderate set, size medium, unattractive, irregular shape, color dull yellow with pinkish orange blush, good firm texture both at harvest and after storage, juicy, retains flavor well. Possible backyard, no commercial potential.
GoldRush (October 30) (Recently named, tested as Coop 38, HER-4T-15) Moderate set, size highly variable, some quite small, yellow skin occasionally splashed and blushed pinkish red, poor finish, unattractive, flavor variable from subacid to tart, very firm, keeps well. Did not develop much sugar by harvest date, probably too late ripening for here.

Questionable Value (Problems and Drawbacks):

CLR-20T-14 (August 30) Heavy set, size small, uniform, good color but rather poor finish, unattractive; flesh crisp and very firm, holds up well in storage, but flavor rather mediocre, subacid to tart.

CMR-2T-13 (August 30) Moderate set on young tree, size medium, uniform, fruits ripen unevenly and highly colored fruits tend to drop, color rather unattractive, yellow-green striped with red, skin becomes very greasy in storage, though flavor is acceptable at harvest it declines rapidly.

CQR-10T-17 (August 30) Moderate set, size medium and above, ripens unevenly, color unattractive dull red stripe over yellow, similar to King, flesh is firm and juicy, but mediocre flavor goes entirely dead after 3 months storage. Severe mildew.

HER-10T-108 (September 16) Moderate to heavy set, size small, color dappled and splotched red over yellow, unappealing, flavor and texture acceptable at harvest but becomes mealy in storage.

HER-3T-175 (September 24) Heavy set, size small to occasionally medium, unattractive color, dull yellow with coppery blush, firm, crisp flesh retains texture in storage but flavor mediocre; bitter pit.

CLR-12T-161 (September 24) Moderate set, size medium-large, yellow skin easily blemished, fungal spot produced numerous dark red speckles; flavor acceptable at harvest but develops peculiar aftertaste when held in storage, flesh softens.

HFR-22T-173 (September 24) Moderate set, size large to medium-large, conic shape, yellow with pale pink blush, faint whitish bloom; very juicy, flavor subacid to tart, becomes soft in storage and more noticeably acid.

PWR-37T-131 (October 1-8) Moderate set, size medium to small, good color, dark red with broken dark stripe, very firm texture even after storage but flavor unacceptable, bitter aftertaste. Probable discard.

HER-4T-20 (October 1) Moderate set, size small, unattractive dull yellow; very hard, dense flesh retains texture well but flavor is mediocre at best.

CLR-13T-49 (October 8) Moderate set, size small, very unattractive, yellow, very hard flesh, mediocre quality at harvest, off flavor develops in storage, probable discard.

Nova EasyGro (October 8) Moderate set, size medium or slightly above, color unattractive, dull brick red over greenish yellow, tends to sunburn where exposed to much light; flavor acceptable but far from best, disease resistance its only strong point.
CRABAPPLE RESEARCH 1993
Washington State University
Mount Vernon WA 98273

J. King and G.A. Moulton

This year was one of transition, in which the purpose and future of the crabapple evaluation plot at Mount Vernon were examined and some short-term decisions taken. A major factor in these decisions was the grant of $3,500 from the WA State Nursery and Landscape Association. This grant, to run through 1994, is to cover the expenses of plot maintenance, data recording, and issuing a bulletin for the general public summarizing results of the crabapple trials to date. As a result of this support, permission was received from WSU to plant additional trees from the National Crabapple Evaluation Project, which will constitute Phase II of the NCEP ongoing trial. The new trees (see list below) were received and planted in April 1993.

Discards from the current crabapple plot were completed over the winter of 1992-93. Trees remaining in the proposed new road alongside the ditch are scheduled to be moved into open spaces in the plot; moving and discarding trees will be completed in early 1994. The new trees from NCEP were not planted in the current plot but placed for the time being in another location, which has been tentatively scheduled to become the new crabapple test plot. The new test plot is proposed to include the new NCEP selections plus new trees of the best performing taxa from the current plot. Some crabapple seedlings of local origin that seem to show good disease resistance and bloom quality will also be included, as will selections from the PRI disease resistant program. The plot will be intended not only for evaluation but also as a demonstration plot for nursery and landscape professionals, and the general public.

Trees planted in 1990-91 had their first significant bloom season this spring, and look very promising. A brief description and evaluation appears below, along with comments on the established taxa. Lists are in alphabetic order, with bloom period noted in parentheses.

New Plantings:
Adirondack (3)  Pink Satin (1)
Camelot (3)  Prairie Maid (3)
Lancelot (3)  Purple Prince (3)
Morning Sun (2)  Silverdrift (3)

Recent Additions 1990-91:
Candymint - (Late) Colorful purplish leaves in spring, maroon buds inconspicuous until pink flowers open. Mildly fragrant blooms scattered throughout low, spreading tree. Retains leaves well in fall but color is dull and dark, fruit sparse, inconspicuous.

Doubloons - (Late) Dense, compact bloom; red buds open to creamy white full double flowers accented by pink outer petals, fragrant and very abundant; tree rounded, compact and shrubby. Retains some leaves, fruit moderately abundant but not very colorful.

Evereste - (Mid) Red buds open to very dense, white, long-lasting bloom, fragrant and very attractive; tree rounded and compact. Retains all leaves until late, spectacular show of large bright red fruit. One of the best all-season cultivars.

Glen Mills - (Mid) Pink buds open to very large, showy white flowers, fragrant and fairly abundant; tree is attractive with strongly upright habit. Retains all leaves until late, abundant dark red fruit, persistent.

Golden Raindrops - (Late) Early buds pink, small and rather inconspicuous, opening to attractive starry white flowers, abundant and mildly fragrant; tree upright spreading, with very distinctive cut-leaf foliage. Retains all leaves until late, small bright yellow fruits are conspicuous, attractive. Very promising.
Louisa - (Mid) Carmine-red buds open to pink, mildly fragrant flowers; bloom is abundant and tree has a pronounced weeping habit; overall color and shape are very nice. Retains some leaves in fall, but fruit sparse and not colorful.

Pink Satin - (Mid-Late) Abundant maroon buds add color to green-leaved tree even before opening, mildly fragrant carmine-pink flowers; tree upright with long whippy branches. Most leaves drop early, fruit is rather inconspicuous, dull colored, scabby.

Sinai Fire - (Mid) Pink buds open to fragrant white flowers, moderately abundant; tree low spreading. Retains leaves until late, attractive red fruit, promising potential as semi-weeper.

Established Trees:

Adams - (Mid-Late) Blooms retain deep pink color well after opening, round spreading tree; rates high at bloom time but is mostly defoliated by September; dark red fruit moderately abundant. Probable discard.

*M. baccata* v. *jackii* - (Very Early) Fresh-looking white bloom on large, vigorous upright-rounded tree, very dense foliage. Retains all leaves until late, red fruit moderately abundant and persistent. Fine show of early bloom.

Bob White - (Early-Mid) Nice round shape, compact, full of white bloom, mildly fragrant. Retains all leaves until late though foliage color is rather dark; abundant small yellow fruit.

Christmas Holly - (Mid-Late) Small, low-spreading tree, packed with intensely fragrant white bloom, long bloom period keeps tree looking attractive, perfect for limited spaces. Retains all leaves until late, small bright red fruit, abundant, attractive, birds like them. Excellent all-season tree.

David - (Mid-Late) Mix of red buds and white bloom is attractive from early stage, good fragrance, keeps on blooming over long period, moderately vigorous tree. Retains most leaves until late, attractive dark red fruits moderately abundant.

Donald Wyman - (Mid) Very dense white bloom, fragrant, tree upright-rounded, highly attractive. Leaves drop off early in fall, leaving abundant bright red fruit, very persistent; old dried-up fruits are retained among next spring blossoms.

*M. floribunda* - (Mid) Small, low-spreading trees, abundant overall bloom an attractive, highly fragrant mix of pink and white. Leaves drop off early and tree is bare and unattractive, especially in non-fruiting years. Probable discard.

Indian Magic - (Mid) Deep maroon buds open to carmine-pink, retain excellent color, mildly fragrant, trees' spreading habit and overall color very attractive. Most leaves drop early, but very abundant, brilliant red fruit persists into the winter, making bare trees very colorful.

Indian Summer - (Early) Maroon buds open to pink, fragrant flowers, bloom tends to fade but is very profuse so overall appearance remains good. Leaves drop off early, red fruit adds color but less abundantly than on Indian Magic (see above).

Jewelberry - (Mid-Late) Red buds open to very profuse, long-lasting pink and white flowers, non-fragrant; very small tree, low spreading habit suited for limited-area planting. Retains all leaves until late, small red fruits are moderately profuse, add color.

Mary Potter - (Mid-Late) Red buds open to very fragrant, dense white flowers, mass of bloom is profuse and long-lasting, low spreading trees remain modest size. Most leaves drop by September but bright red
fruit are attractive.

Molten Lava - (Mid) Pink buds open to highly fragrant white flowers, weeping habit produces cascades of very profuse bloom. Retains all leaves until late, leaves may turn orange or copper before dropping; fruit small and bright red but don't show much until leaves fall. Very attractive, vigorous tree suitable to larger landscape sites.

Ormiston Roy - (Early) Pink buds open to lightly fragrant white flowers, bloom abundant, tree spreading, more vigorous than Mary Potter. Retains most leaves, small fruit is moderately abundant, persistent, but rather dull color.

Prairie Fire - (Late) Maroon buds, coppery foliage make tree a landscape asset even before blooms open, very profuse, spectacular bloom is strong, deep pink, very little fading, lightly fragrant. Retains most leaves well into fall, though leaf color is dark; fruit moderately abundant, dark red. Best late-blooming pink.

Professor Sprenger - (Mid) Pink buds open to white, fragrant blossoms that fill the vigorous, upright-spreading tree, suited for larger landscape sites. Most leaves drop by September but very abundant bright orange fruit is very colorful and attractive.

Ralph Shay - (Early-Mid) Red buds open to white, mildly fragrant bloom, moderately profuse on upright-spreading tree, inner areas may be scant of bloom. Leaves drop early, fruits are large and red but often blemished, scabby.

Sentinel - (Early) Red buds open to pink-and-white bloom, strongly fragrant, that adds an attractive pink tinge to entire tree, good contrast with pure-white types like M. sargentii. Retains leaves until late, bright red fruit only moderately abundant, very persistent; some dried-up fruits remain until spring.

Silver Moon - (Late) Pale pink buds open to very large, showy white flowers in open clusters, mildly fragrant, fairly abundant on newer wood; tree is large, vigorous, and strongly upright. Retains all leaves until late, small dark red fruits are scattered throughout tree.

Snowdrift - (Mid) Pink buds open to pure white bloom, mildly fragrant, very profuse, tree vigorous, upright-spreading. Retains some leaves, full of very attractive bright red fruit.

Strawberry Parfait - (Mid) Carmine buds open to showy large flowers, pink with shaded margin, strongly fragrant, bloom sometimes unevenly distributed on branches, tree rather small, sprawling habit with angular limbs. Most leaves drop by September, dark red fruit is abundant but relatively inconspicuous.

Sugar Tyme - (Early) Pink buds open to dense white bloom, highly fragrant, on vigorous but compact upright trees, overall effect is a spectacular splash of white. Retains all leaves until late, very abundant colorful red fruit lasts all winter, sometimes dried-up fruits remain among the flowers. Excellent all-season tree.

Tea (M. hupehensis) - (Early-Mid) Pink buds open to attractive, strongly fragrant pink-and-white flowers, covering entire tree with delicate blush; moderately vigorous spreading tree. Retains all leaves until late, abundant yellow fruit does not fully color until November.

M. Tschenoskii - (Mid-Late) Pale pink-and-white buds open to inconspicuous white bloom, in clusters distributed rather sparsely throughout tree; tree very vigorous, upright columnar habit, silvery leaves; tree shape is more ornamental than its bloom. Retains all leaves, may have showy copper to orange fall leaf color, fruit usually inconspicuous.

White Angel - (Early-Mid) Pink buds open to pure white, mildly fragrant bloom, upright-spreading tree of rather open structure, emphasized by long branches abundantly covered with flowers. Retains most leaves until
late, very abundant, colorful red fruit displays well on long open branches.

*M. yunnanensis* v. *veitchii* - (Very Late) Pale yellowish pink buds open to flat, star-shaped flowers with strong woodsy aroma, may be unappealing to some, blooms in clusters from single spurs; tree upright columnar but not as tall as Tschonoskii. Retains all leaves until late, fruits are few, inconspicuous.

*M. zumi* v. *calocarpa* - (Mid) Red buds open to very fragrant white flowers, forming a gorgeous mass of pink and white against dark angular limbs, spreading habit. Retains most leaves until late, abundant bright red-orange fruit very attractive.
The 1993 season saw a return to the more usual weather pattern of the Puget Sound region, with many cool damp days at bloom time, continuing through midsummer. However, most cultivars bloomed well within the usual period and set at least a moderate crop of fruit. In August and September clear, sunny days characterized the harvest season, though heat levels did not match those of 1992 and as a result, some varieties did not develop as high sugar content even at full ripeness.

In the early season, Ichiban Nashi and Hame-se #1 did well again this year, though Ichiban Nashi could have benefited from more thinning to increase fruit size. Mishirasu produced exceptionally large fruit, but relatively few of them, and the tree seems to have a rather sprawling, leggy habit of growth. Shinseiki and Chojuro both produced good quantities of high quality fruit and can be considered the standards for overall performance. Yoinashi produced a good quantity of attractive tawny-skinned fruit with excellent flavor. Since 1992 we have discarded a large number of late-season varieties that did not ripen successfully in our climate conditions, and variety selections are being narrowed down to those that really perform well.

A summary of the different varieties and their performance follows (1993 harvest dates in parentheses):

**Established Cultivars:**

**Ichiban Nashi** (August 20/August 30) Heavy set, fruit size medium to small, needed more thinning, flavor good, sweet, attractive golden-brown skin, nice finish; vigorous healthy trees.

**Shinsui** (August 30) Light set, fruit size medium to small, light brown skin, flesh gets soft rather quickly, flavor variable, some very good.

**Shinseiki** (August 30/September 10) Moderate set, good thinning in most trees, size variable; some limb rubs and blemishes but overall acceptable finish, flavor very good, sweet. Selective pick for ripeness improved size and quality of second picking (about 10 days later.)

**Kosui** (September 8) Moderate set, fruit smaller than normal, one tree diseased; light brown skin, crisp firm flesh, excellent sweet flavor. This variety needs a diligent program of disease control to maintain healthy trees (they are susceptible to pseudomonas) but the high quality of fruit makes the effort worthwhile.

**Yonig** (September 24) Moderate set, size medium to large, light brown skin, crisp flesh with pronounced spicy flavor especially with the skin on, some find the flavor too strong.

**Chojuro** (September 24/October 1) Moderate set, size variable, most medium size, standard brown-skinned variety, very well adapted to Puget Sound conditions; firm flesh with spicy flavor, may turn winey after long storage.

**Yoinashi** (October 1) Moderate-heavy set, size medium to occasionally large, light brown skin, attractive, good sweet flavor and crisp texture; vigorous healthy trees.

**Not Fully Evaluated:**

**Hame-se #1** (August 13/August 20) Heavy set on small, young tree, fruit size medium, occasionally larger; size was acceptable despite heavy fruit load; very attractive fine-skinned yellow fruit, sweet, crisp, good quality.
Mishirasu  (October 1) Moderate set, tree leggy, sprawling, fruits large to very large, rough brown skin, very crisp crunchy flesh, good flavor. Insufficient fruit as yet for full storage evaluation.

UC 17-63  (October 1) Moderate-heavy set, size above medium to large, yellow skin with heavy russet netting, unattractive, but pleasing firm texture and good flavor. No commercial potential, probable future discard if not to be named by UC.

Ya Li  (October 7) First full fruiting year, planted in 1987. Moderate set, size medium, pyriform shape, solid light-green color, crisp white flesh a bit on the acid side. Try one more year.

Provisional (final year - probable discard):

UC 8-46  (October 1) Heavy set, fruit medium to large, attractive, but flavor on the bland side.

UC 13-53  (October 7) Moderate-heavy set, fruit large, dull greenish brown skin, crisp firm flesh but lacking flavor, probably too late for here.

Tsu Li  Unproductive after 7 years in orchard. Probably too late for here. Keep only if needed pollinizer for Ya Li.

Discard:

Nijisseiki (20th Century)  (August 30) Moderate set, fruit small, ripe slightly before Shinseiki but of mediocre quality, often lacking sweetness even when well thinned.

Hosui  (September 10) Poor set, size below medium to small, fruit quality is excellent but the tree is very unproductive and highly susceptible to disease. Was listed for discard in 1992.

Koyama  (September 24) Poor set, small non-vigorous tree, fruit medium to small, quality mediocre, can't compete with Shinseiki or Chojuro.

UC 12-44  (October 1) Moderate-heavy set, size medium or above, fruit quality not outstanding, unlikely to be named by UC.

Shinko  (October 1) Light set, size medium or above; borderline maturity at Mount Vernon but could do well in somewhat warmer area, listed for discard in 1992.

Imamura Aki  (October 7) Moderate-heavy set, fruit above medium, some very large, dull brown skin, prominent lenticels; flesh crisp and firm but lacks flavor, too late for here.
PEAR RESEARCH 1993
Washington State University
Mount Vernon WA 98273
G.A. Moulton, J. King, and R.A. Norton

The 1993 season saw a return to the more usual weather pattern of the Puget Sound region, with many cool damp days at bloom time, continuing through midsummer. Pears, however, are well adapted to a cool maritime climate so most cultivars (varieties) bloomed well within the usual bloom period and set a good crop of fruit. Weather was cool and cloudy in the pre-harvest period, but in August and September clear, sunny skies greeted the harvest season, even though heat levels did not match those of 1992.

In the very early season, Harrow Delight again produced loaded trees; just as in 1992 fruit size could have been improved by harder thinning. Clearly this is one variety where it would pay to be more aggressive. Orcas and Rescue upheld their record both for productivity and good size. Comice was not as productive as usual, though fruit size and quality were good. Bose performed well, with all trees producing large, attractive, fully russeted fruit, although two of the trees were not as productive as last year.

Among the red-skinned pears we are testing, Starkrimson (Kalle strain of red Clapp Favorite) is again the best: colorful, uniform, reliable, and productive. The only drawback is its mild, rather bland flavor. Sensation Red Bartlett fruits have good flavor, but tend to be small; color is unimpressive and the tree not very productive. A small tree of Crimson Gem Comice produced few fruits but they were very attractive; we hope for a better crop in 94. Cascade was a disappointment as to productivity, producing only very few (though quite large) fruit. Red D’Anjou produced a crop for the first time since planting in 1984, but was heavily infected with scab. Passe Crassanne Rouge also produced its first crop, but the shape is unattractive and the color, a dull red stripe, was poor. Both of the latter two varieties are late ripening as well, and do not seem like very good future prospects.

A summary of the different varietics and their performance follows, listed in harvest order (1993 harvest dates in parenthesis):

Established Cultivars:

Rescue (August 20) Heavy set on mature, non-vigorous tree, fruits large to very large, most have strong red-orange blush, well-shaped, attractive; mild sweet flavor, 2 months' storage only.

Starkrimson (August 20) Heavy set, vigorous productive tree, size above medium, very uniform, excellent color, 100% red blush, very attractive; mild sweet flavor, melting flesh, not for long storage.

Clapp Favorite (Bennett strain) (August 20) Heavy set but variable, some areas set better than others, medium size, uniform attractive shape, most lightly blushed; mild flavor, not for long storage.

Clapp Favorite (standard) see above

Orcas (September 3) Heavy set on large mature tree, fruit large and fairly uniform, most with 10-30% blush, though rather lumpy in appearance; keeps well for an early harvest pear, very good for drying and canning.

Comice (September 20) Poor set both on trellis and orchard trees, less than half box of fruit total; fruit size above medium to large, most had good finish, a few limb rubs. Good storage, high dessert quality, very juicy.

Highland (September 20) Moderate set in field, heavy set on trellis; size variable but most were medium or slightly larger. Light netted russet was common, and a few fruit were marked with scab. Good storage, firm, high quality.
Conference  (September 24) Poor set on rather runted, non-vigorous trees, only 3 fruit on tree in E; size below medium to small, long pyriform shape, slight netted russet. High quality but unproductive so far. Good storage, good flavor, need more fruit for full evaluation.

Bosc (Golden Russet) (September 20 - October 1) Heavy set on tree D 2-9, moderate to light on two others; excellent size and finish, very attractive all-over russet, little scab. Very good storage, 6 months or better, firm flesh, good flavor, excellent culinary as well as dessert.

Not fully evaluated:

Harrow Delight  (August 13) Very heavy set, needs strong thinning, size medium and below, pyriform shape, similar to Bartlett, light to moderate russetting, little scab. Storage not more than 2 months, good flavor.

Roosevelt  (August 27) Moderate set, first fruiting of young trees, vigorous and upright; size medium or slightly below, shape blocky and rounded, rather rough skin, slight blush on some; slight pre-harvest drop. Insufficient fruit for full evaluation.

Red Cascade  (August 27-sample #1; September 8-sample #2) Only 9 fruit on tree, may be biennial or shy bearing, fruit large, roundish, dark red blush 100%. Good flavor, insufficient fruit for storage evaluation. Check again in 94 for productivity, perhaps try on a different rootstock.

HW 606  (August 23 - September 6) Heavy set, vigorous productive tree, size medium to small; fruits ripen over extended period, late fruits have sweet, rich flavor ripe from tree. Numerous parthenocarpic fruits in late season. Storage variable, needs selective harvest.

Mericourt  (September 8) Light set, young vigorous tree; fruit size medium, shape highly variable -most are roundish and blocky, but occasionally pyriform, dark green skin. (May have been picked too early; check harvest date in 94.)

Beurre Alexandre Lucas  (September 8) Light set, first fruiting on young vigorous tree, size medium or slightly below, blocky in shape with very faint blush on some, smooth skin, very little russetting. Insufficient fruit for storage evaluation.

HW 605  (September 10) Very heavy set, bending down branches, fruit small, somewhat similar to Seckel in shape and appearance, fairly uniform; some scab lesions especially where closely clustered. Flavor fair to good, storage not yet evaluated.

Crimson Gem Comice  (September 20) Small young tree, 3 fruits only, medium size, typical Comice shape, excellent uniform dark red color. Could be promising if productivity improves. Storage not yet evaluated (probably similar to standard Comice).

Spalding  (September 20) Moderate set, vigorous tree, rather leggy; fruit variable size, most medium to small, roundish pyriform, smooth light green skin, flesh very crisp, crunchy, juicy, similar to Asian pear when ripe on tree. Storage not yet determined.

Passe Crasanne  (October 28) Young vigorous trees, moderately productive, fruit size medium, blocky, oblong; very late ripening, may not fully mature. Storage not yet evaluated.

Passe Crasanne Rouge  (October 28) Same as above; red color not predominant.

Blancia  Young tree, did not fruit

Concord  Young tree, did not fruit
Provisional (final year - probable discard):

**Sensation Red Bartlett** (August 30) Moderate set, mature tree, somewhat leggy; fruit size below medium to small, color fair to good (some striping with uneven blush), light scab; flavor like Bartlett, aromatic, storage about two months.

**Red D'Anjou** (October 6) Moderate set on mature, vigorous tree, size variable, most above medium to large; color 100% all over dark red. Very severe scab on 80-90% of fruit. Storage not yet evaluated, if similar to standard D'Anjou, would need 40 days plus of refrigerated storage to ripen out properly.

**Discard:**

**Tim Harris** (July 30-August 3) Heavy set on vigorous upright tree, small to medium size, highly variable ripening, fruit drops, soft texture, aromatic flesh quickly develops off flavor; does not store, discard.

**Santa Maria (Morettini)** (August 23) Fair set on headed-back tree, scheduled for 92 discard; medium size, smooth, blushed about 20%; crisp firm flesh but bland and flavorless.

**Colette** (did not fruit) Small tree, runted out in shade of large apple. Past production was small fruit, but very well flavored, with storage life till late December. Discard, or make new trees on OH x F rootstock.
The 1993 season saw a return to the typical weather pattern of the Puget Sound region, with many cool damp days both at bloom time and at harvest season. Despite the intermittent rains throughout the plum bloom period (March 25-April 15), the daytime high temperatures averaged 56°F, sufficient for bee activity. The majority of the cultivars (varieties) set moderate to heavy crops, so in most cases pollination did not appear to be a problem. Cool cloudy weather persisted in the pre-harvest and harvest period; although actual rainfall for July and August was lower this year than in 1992, heat levels did not match those of 1992 at any stage. Plums, especially European plums, are less sensitive to low heat than are apricots, peaches, and nectarines, and in general fruit quality was good.

Of the Japanese types, Shiro and Beauty continue to perform well as in previous years, and to stand out both for reliable production and for fruit quality. Seneca is the best all-purpose plum of the European type, good for fresh eating, drying, and canning. Valor, another Italian type in the late season, looked quite promising, with many large, sweet fruits. Two pluots, Flavor Queen (yellow) and Flavor Supreme (red), produced sweet, juicy fruit similar to hybrid plums, but neither variety was very productive in the first year of fruiting.

A summary of the different varieties and their performance follows, listed in harvest order (1993 harvest dates in parentheses):

**Established Cultivars:**

**Beauty** (July 23) Heavy set, size medium to large, maroon skin, yellow flesh; somewhat variable ripening, very productive; cling stone, very juicy, good flavor. Some russet and cracking but overall very promising, replaces Santa Rosa for Puget Sound climate conditions.

**Methley** (July 23 - August 6) Heavy set, size small, uniform, maroon skin, red flesh, cling stone, very juicy and sweet; trees highly productive, may need support to prevent limb cracking. Fruits ripen over 2-3 weeks, occasional cracking when full ripe. Good for culinary use also.

**Shiro** (August 8 -14) Moderate to heavy set, large size, skin and flesh yellow, cling stone, some gum pockets. Standard early yellow plum, best Japanese type for local climate, large, productive, sweet and very juicy.

**Mirabelle** (August 11 - 15) 'NY 858' clone, heavy set, small cherry size fruit, very uniform, skin yellow speckled purple-red, free stone. Excellent sweet flavor, firm yellow flesh, very good also for culinary, e.g. compote, jam, tarts. Tree vigorous, very productive and reliable, primarily suited for home orchards.

**Seneca** (August 15-20) Heavy set, size large, maroon skin, yellow flesh, completely free stone; best quality European plum, some variable ripening but all fruits very sweet, firm, juicy; good for canning and drying as well.

**Italian Prune** (August 25 - 30) Moderate set, some pre-harvest drop, size medium or slightly below, free stone, greenish yellow flesh. Standard Italian type, productive mature tree, good flavor, sweet; some rot, little cracking, fruit on the small side.

**Stanley** (August 30 - September 3) Heavy set, some pre-harvest drop, medium-large size, purple skin, firm dense yellow-green flesh, semi-free stone; late Italian type, uniform in size, color, ripening, very productive but not as sweet as Seneca or Valor.
Not fully evaluated:

Methley B-20 (July 23) Moderate set, size small to medium, reddish-purple skin, yellow flesh. (Note: standard Methley has red flesh.) Firm, juicy, little pre-harvest drop, some gum pockets, blossom ends may crack and rot, flavor inferior to standard Methley.

Candee (August 6) Light set in first year fruiting, size medium, maroon-red skin, greenish yellow flesh, very firm, occasionally stringy when full ripe; some rot, flavor good otherwise, sweet, nice firm texture.

AR - 13 (August 10) Light set, very few fruits on vigorous tree, skin 80-100% red over yellow, yellow flesh, cling stone. Juicy and sweet but astringent skin leaves unpleasant aftertaste; if not more productive in 1994, consider discard.

Verity (August 13) Moderate set, size medium and below, purple skin, yellow flesh, semi-free stone; Italian prune type, good sweet flavor, moderately productive.

Flavor Queen Pluot (August 13) Light set, very few fruit on vigorous tree, size medium; skin and flesh yellow, semi-free stone, flavor similar to hybrid plums, sweet firm flesh.

Flavor Supreme Pluot (August 13) Light set, very few fruit on vigorous trees, size medium; red skin, pink flesh, very sweet with melting texture, better flavor than Flavor Queen.

CB - 28 (August 16) Light set on young trees, size small, heart-shaped, red skin, firm flesh shading from pink to red, semi-free stone. Attractive fruit with pale grey bloom, sweet flavor but astringent skin.

Redhearts (August 20) Light set, size medium or slightly larger, skin dark maroon with conspicuous pale dots, red flesh, semi-free stone; flavor good but occasional astringent aftertaste, many fruits crack at blossom end before ripening. Potential discard if yield doesn't improve.

Valor (August 25 - 30) Heavy set, large fruit, uniform, attractive purple skin with blue bloom, firm yellow flesh, very sweet, almost completely free stone. Italian type, very productive, earlier than Stanley and better flavor; some gum pockets but not a serious problem.

Schultz (August 30) Moderate set, small young tree, medium size, yellow skin, firm dense yellow flesh, semi-free stone, some gum pockets. Late yellow plum of European type, good set and fair flavor, could be sweeter in a better year; seems productive.

Songold (August 30 - September 10) Light set on vigorous tree, size medium to large, skin color quite variable, 30-90% red over yellow, flesh yellow, soft, cling stone, some gum pockets; mature fruits sweet and juicy but very late and uneven ripening, some did not fully mature. Check again in 1994.

Provisional (final year - probable discard):

CB - 68 (July 23) Moderate set, size medium to small, maroon-purple skin, pinkish red flesh; cling stone, very juicy. Variable maturity, flavor unappealing unless fully ripe; ripe fruit dark purple, sweet. Some gum pockets.

AU - Crimson (July 26 - August 6) Moderate set, size medium to large, attractive red skin color, yellow flesh, extremely variable ripening, some rot, cracking, gum pockets, skin russet scars, poor finish about 30% of fruit. Strong bitter aftertaste from skin is very disagreeable.
CB - 71  (August 16) Light set, very few fruit on young vigorous tree, small cherry-size red fruits, yellow flesh very soft and juicy, rather bland flavor. Check for better productivity in 1994.

4285 Plum  (August 20) Very poor set on vigorous upright tree, small fruit, purple skin, yellow flesh, free stone, some fruits shrink to side of pit. Fruit good and sweet but small, similar to "French Petite," and very few; potential discard if yield doesn't improve.

Discard:

Bruce 12-4  (August 3) Moderate set, size medium to small, attractive appearance, red skin and pinkish orange flesh, but very bad flavor, sickly sweet with chemical aftertaste. Tree sprawling and bushy.

Frontier  (August 3) Light set, size medium, uniform, maroon skin, red flesh, cling stone, very soft and juicy; not highly productive, astringent skin affects flavor, ripens unevenly, some fruits misshapen, gum pockets.

Biringer  (August 6) Heavy set, medium size, skin pale yellowish green with pale grey bloom, unattractive, yellow flesh, dense, sweet, similar to Green Gage but larger. Tends to rot especially in clusters of fruit.

PP 6973-2  (August 10 - 15) Heavy set, medium size or slightly below, purple skin, yellow-green flesh, semi-free stone. Italian prune type, good sweet flavor but not noticeably better than named Italian types such as Richards. If not to be named by WSU, discard.
The 1993 season saw a return to the typical weather pattern of the Puget Sound region, with many cool damp days both at bloom time and in the harvest season. At Mount Vernon the full bloom period for 80% of the sweet cherry cultivars (varieties) was the second week of April (April 8-17); during most of this period it was cloudy, with 7 of the 10 days registering some precipitation. High temperatures averaged 57°F and lows averaged 45°F. This was considerably cooler than in 1992, but the less favorable conditions at pollination did not appear to affect fruit set in a quantifiable way. That is, some varieties set less fruit than last year but others blooming at the same time did as well as or better than in 1992. Productive varieties such as Angela, Emperor Francis, and Bing seem to set well regardless of the conditions at bloom time, while those that tend to be shy bearing often perform poorly even in optimum conditions.

Conditions at harvest (June 28-July 12) were also not ideal, as cool cloudy weather continued from spring into summer. Fortunately, however, actual rainfall which would initiate cracking was infrequent during this period, so fruit damage and rot were lower than expected. Again the major destruction was by birds, and some netting was done to preserve varieties until harvest evaluation could be made.

A very promising variety this year was Sweet Anne, a yellow-fleshed cherry with good sweet flavor and heavy crop load. Angela was again a top producer of high quality, flavorful fruit with a minimum of cracking. Kristin and Lapins both performed better than last year in terms of production, and the fruit quality was very good as well. Hardy Giant had some problems with pre-harvest drop and cracking (about 30%) but there was plenty of very good fruit left to harvest. Tulare, a young tree in its first bearing year, produced large dark fruit that was very crisp and sweet; we will be interested to see its performance in 1994.

A summary of the different varieties and their performance follows, listed in harvest order (1993 harvest dates in parenthesis):

**Established Cultivars:**

- **Early Burlat**  (June 20-22) Moderate set and size, low cracking, some rot; flavor better than Moreau this year, more productive. Birds got 90% of the fruit.
- **Moreau**  (June 20-22) Light set, size above medium, cracking and rot about 20%, bird damage severe. Softer than Early Burlat and less flavorful this year.
- **Stella**  (July 4-6) Moderate set, medium size, low cracking, some clumps of rot (30%) where fruits bunched closely together; good flavor. Note: trees are self fertile.
- **Hardy Giant**  (July 4-6) Moderate set, most large size, some pre-harvest drop and cracking (about 30%), little rot. Attractive dark fruit, good flavor, firm texture. Tree is sufficiently productive despite some tendency to fruit drop.
- **Angela**  (July 4-6) Heavy set, size medium or below, rot and cracking low (about 10%). Tends to overset with resulting small fruit, but very good in 93, excellent flavor.
- **Van**  (July 4-6) Moderate set, medium size, cracking and rot relatively low (below 30%). Softer than Bing or Hardy Giant but good, sweet flavor and attractive color.
- **Viscount**  (July 4-6) Moderate set, size medium to large, some trees do not set full crop load. Dark, attractive, flavorful fruit, little cracking or rot (about 10%). Main problem is that tree is an unreliable cropper.
Bing (July 8-10) Moderate set, medium large size, cracking 40%, rot 20-30%. Standard sweet cherry for commercial market. Cracking medium-high with clumps of rot; netted against birds until harvest. Excellent color and flavor in sound fruits.

Emperor Francis (July 8-10) Heavy set, size medium to occasionally large, little rot or cracking (less than 20%). Fruit yellow with bright red blush to 90%; good size and color on most fruits, flavor acceptable though not as sweet as Rainier or Sweet Anne. Major recommendation is its heavy, reliable production.

Montmorency (July 12-15) Moderate set, medium size, no cracking, very little rot. Late ripening, very soft fruit, stems and pits may remain on tree when fruit is picked. Standard tart cherry for culinary use; productive, reliable, performs well in western WA conditions.

Not Fully Evaluated:

Craig's Crimson (July 4-6) Poor set on young trees; 3 out of 4 had no fruit, one had only a handful, badly cracked. Size variable, too cracked and rotted for good evaluation. Review in 1994, possible future discard.

Bada (July 8-10) Moderate-heavy set, large fruit, low cracking (10%) and rot (20%, mostly after bird pecks). Vigorous productive trees; fruit yellow with bright red blush to 70%, good sweet flavor, sweeter than Emperor Francis, softer than Rainier. Problem is that too much of the fruit is high up in the tree.

Lapins (July 8-10) Moderate set, large size, low cracking, some rot (20-30%). Dark fruits are attractive and good eating, with nice flavor and texture; some fruits stay red, don't want to ripen. Evaluate again in 94.

Kristin (July 8-10) Moderate-heavy set, better than previous years on 2 out of 3 trees, size medium or slightly below, some cracking (20-30%) and more rot (40%). Fruit flavor and quality good.

Sweet Anne (July 8-10) Heavy set, medium size, cracking and rot below 20%. Fruit yellow with excellent bright red color, looked very nice this year, with better flavor and good size even though set was heavy. Upright habit means most fruit must be picked from ladders - see Bada.

Tulare (July 8-10) First year fruiting, moderate set, large fruit, low cracking, no rot. Very attractive dark fruit, good sweet flavor; needs further evaluation but looks promising.

Bergie New tree to replace the ones removed in old cherry block, not yet fruiting.

King New trees not yet fruiting

Provisional (final year - probable discard):

Merla (June 26-28) Light set, medium large size, cream yellow flesh, pinkish red blush 20-80%; low cracking, rot about 30%. Fruit has fair flavor but too soft in texture. Very attractive to birds, almost all destroyed.

Merpet (June 26-28) Heavy set, medium size, yellow flesh, pinkish red blush variable to 80%, elongated shape; low cracking and rot. Fruit too soft, destroyed by birds.
Columbia  

(July 4-6) Light set, size large to very large, cracking 40-50%, low rot. Fruits very large, attractive, and sweet like Rainier but few of them, some cracking. Vigorous upright trees. Discard in 94 if productivity remains low.

NY 11375  

(July 15-20) Light set, medium size, no cracking, very little rot. Pie cherry, red, oblong in shape; very late ripening. Tree is bushy and spreading, does not appear highly vigorous or productive. Discard in 94 if no improvement.

Royalton  

(no fruit) Tested as NY 11390. Tree established 1988, produced no fruit in 93 and only a handful in 92, though bloom was profuse and coincided with other available pollinizers in the plot. Try pollination test for compatibility in 94.

Discard:

NY 6476  

(June 26-28) Moderate set, size medium, fruit ripens unevenly, of good quality, crisp and sweet, where not damaged by cracking (60%) and rot (30%). Tree appears to have fewer leaves than normal. Probable discard.

PC 6680-1  

(June 26-28) Moderate set, medium-large size, cracking 30%, low rot. Last of the Toyama selections on station; acceptable quality and performance but no better than available cultivars e.g. Angela, Hardy Giant. Probable discard, not good enough for introduction.

Compact Stella  

(July 4-6) Heavy set, size medium-large, cracking and rot about 20%. Trees have reverted to standard size, otherwise very nice fruit this year, large, sweet, dark. Probable discard, fully evaluated.

Utah Giant  

(July 4-6) Light set, size medium to large, cracking 70-80%, rot about 30%. Vigorous trees but poor set, fruits very firm, crisp, and dark, flavor very good but cracking is severe. Not suited for western WA; probable discard.

Rainier  

(July 8-10) Moderate set, large size, less than usual cracking (about 20%), some rot (30%). Good quality, large sweet fruit, nice red blush; too bad it doesn't perform as well as this every year. Probable discard, fully evaluated.

Cavalier  

(July 8-10) Light set, large fruit, some cracking and rot, about 30%. Good fruit flavor and texture, nice and firm. Trees are very vigorous on Mahaleb, moderately vigorous on Mazzard; in either case the trees do not crop well for their size. Note: trees of Cavalier on Colt and M X M 39 (in block that was cleared in 91) had better rates of fruit set.

Hedelfingen  

(July 8-10) Light to moderate set, medium size, ripens somewhat unevenly, high cracking (50%), rot (30%); branch dieback on ends of some limbs. Dark, rather oblong fruits, not high in flavor. Probable discard.

Lambert  

(July 10-12) Heavy set, large size, very high cracking (70-80%), rot about 30% and getting worse as fruits ripen and crack. Fruits are dark, attractive, high in flavor, excellent eating. BUT fruits develop blossom end cracks as they ripen so nearly all ripe fruit is cracked. Unsuiting to western WA though excellent elsewhere. Probable discard.
PEACH AND NECTARINE RESEARCH 1993
Washington State University
Mount Vernon WA 98273
G.A. Moulton, J. King, and R.A. Norton

The 1993 season saw a return to the typical weather pattern of the Puget Sound region, with many cool damp days both at bloom time and at harvest season. Despite the intermittent rains throughout the peach bloom period March 27-April 15, the daytime high temperatures averaged 56°F, sufficient for bee activity. The majority of the cultivars (varieties) set moderate to heavy crops, so in most cases pollination did not appear to be a problem. Cool cloudy weather in the pre-harvest period affected fruit quality in some of the early varieties that ripened without reaching optimum levels of sweetness, but a mini-heat wave in the first week of August gave the rest of the peaches a much-needed boost to maturity. Heat levels did not match those of 1992 at any stage, but some varieties, including several of the newer ones, proved themselves even in less than ideal conditions.

Early Glory and Harrow Diamond remain the earliest ripening peaches, and both continue to perform well. A new variety, Sentry, looked very promising in its first year fruiting, about two weeks later. In the mid season, Harken and Redhaven were consistent in their performance, reliable and productive. In its first showing, Newhaven drew our attention for its productivity and large, high quality fruit. Double Jewel, another newcomer, had very colorful large fruit, though set was not as heavy. An interesting note on the latter variety is that its flowers are showy bright pink and fully double, making the tree very ornamental in bloom. Among the leaf curl resistant clones, "Tuma" and "Strohl" seemed to be the most promising both in productivity and flavor.

New possibilities also were noted among the nectarines. Juneglo has already proven to be a productive, colorful early variety of good quality, though this year the percent of rot was higher than normal. Nectired, ripe slightly after Juneglo, is very similar in appearance and quality. In the mid season, Summer Beaut produced its first fruit this year; it is quite promising in color, quality, and flavor though fruit production was modest. A late-ripening, dark red skinned variety, Mericrest, had good flavor but was subject to considerable rot.

A summary of the different varieties and their performance follows, listed in harvest order (1993 harvest dates in parentheses):

PEACHES
Established Cultivars:

Early Glory (July 10) Heavy set, size medium to small, some branches needed more thinning; nice color and flavor good considering low heat levels.

Harrow Diamond (July 12) Moderate set, size medium, slightly larger than Early Glory, excellent color but some fruits slightly acidic. Performed better in 92.

Stark Earliglo (July 23) Heavy set, size medium to large, low split pits but a lot of rot and corneyum blight, mildew spots on some. Very little fuzz, good flavor but a trifle acidic this season.

Harken (August 3) Moderate set, size medium and above, corneyum blight seemed to be concentrated on certain branch areas. Most fruit had very good flavor, consistent good color.

Redhaven (August 3-10) Moderate to heavy set on large spreading tree, size medium to large, attractive uniform color. Standard variety, reliable, productive; fruit will hold on tree but later fruits become stringy and lack sweetness.

Stark E. Loring (August 9) Moderate set, size medium to large, split pits about 30%; very good red color in sun but variable throughout tree, flavor good but not top rank.
Frost  
(August 13) Moderate set, size medium and below, low split pits, less than 20%, color variable, tends to uneven ripening. "Standard" for leaf curl resistance in western WA, flavor acceptable but less than best.

Vanity  
(August 25) Moderate set, size medium, splits about 30% with some rot and insect damage. Still the best "late" peach for this area, productive, good flavor, excellent color, some rot but not a big problem.

Not Fully Evaluated:

Sentry  
(July 23) Moderate set, large size, low split pit; color attractive, good flavor and texture, pleasant eating. Slight mildew, blossom end cracking on some fruit, about 20%. First year fruiting, nice early peach.

Tuma LCR  
(August 9) Heavy set, size medium and very uniform, attractive, good color, about 30% split pits invaded by bees. Skin fuzzier than Strohl LCR, softer flesh, flavor only fair this year.

Double Jewel  
(August 11) Light set, size large, few splits; very attractive skin color with little fuzz, good flavor and firm texture. First year fruiting, check for productivity as tree matures; bloom is pink, showy, full double, ornamental.

Strohl LCR  
(August 13) Heavy set, size medium and above, fairly uniform, few splits, rot about 10-15% with several mummified fruits. Excellent color, nearly solid garnet red; firm texture and good flavor.

Newhaven  
(August 13) Moderate set on vigorous productive young trees, fruits large, attractive with up to 90% red blush, good flavor, nearly free stone. First year fruiting, looks quite promising, check again in 94.

Mid-Pride  
(August 13) Light set on vigorous young trees, fruit size medium to large, colorful, good flavor. May be more productive as tree matures.

Har Beauty  
(August 16) Moderate set, fruit size medium, attractive 80-90% red color, split pits moderate to low. Flavor good though some fruits a bit stringy; check again in 94.

Bellaire  
(August 20) Moderate set, size medium to large, few splits, color variable but usually good, flavor acceptable though a bit stringy in some fruits. Some late rot.

Delp Hale  
(August 20) Light set, size medium and below, very few splits, color quite variable; flavor acceptable but not as good as some earlier varieties, slightly acidic.

Harcrest  
(August 30) Light set on vigorous tree, medium size, relatively few splits, color very good, flavor inferior to Vanity in same season, somewhat acidic and bland.

Japan Sdlg.  
(August 30) Light set in first year fruiting, size below medium, white fleshed with skin blushed 10-30% pink over greenish yellow. Sweet good flavor, strongly aromatic, check again in 94.

Roaf  
(September 10) Light set in first year fruiting, size medium, blushed 30-50% red over yellow. Free stone and surprisingly good flavor in so late a peach; no stringiness, very good quality. Check productivity in 94.

Etter  
(September 10) Light set in first year fruiting, size below medium; skin lacks color and
is rather fuzzy, but flavor very good for such a late ripening peach, with pleasant aromatic aftertaste. Check productivity in 94.

**Provisional (final year - probable discard):**

**Harbelle**  
(July 23) Heavy set, size medium to small, relatively low cracking, some mildew spots; bland flavor and stringy texture. Performed better in 92, needed more heat.

**Nerland LCR**  
(August 9) Moderate set, size medium and above, slightly larger than Tuma, split pits less than 20%; very soft melting flesh, slightly off flavor in some, most are acceptable quality but not the best.

**Zachary Taylor**  
(August 13) Moderate set, medium size though somewhat variable, color generally good but also variable, some split pits and rot but not excessive. One tree looks diseased, the other is quite productive with good fruit. Fully evaluated, consider discard.

**Leiser**  
(August 16) Heavy set on small tree -Citation rootstock- fruit size medium and below, color variable and rather poor, moderately fuzzy; flavor acceptable but less than best. Tree seems to have less than normal foliage. Probable discard.

**Early Charlotte**  
(August 30) Moderate set, medium size, color good. Too late, final evaluation in 94, probable discard.

**Vera**  
(August 30) Too late, final evaluation in 94, probable discard.

**Discard:**

**Brighton**  
(July 20) Moderate set, size medium to large; color good but split pits high, accompanied by rot, also cracking and shriveling. Flavor not outstanding and texture rather soft. Mediocre quality, discard.

**Sweet Haven**  
(July 23) Moderate set, size medium; poor color, many splits, fruit cracked and shriveled, soft unappealing texture, skin fuzzier than Brighton. Coryneum infection, mediocre quality, possible discard.

**Cole LCR**  
(August 20) Light set, size small to medium, few splits but fruits do not color well, fuzzy skin, flavor only fair. All trees but those in Landscape Garden discarded; replace in garden with better curl-resistant peach, perhaps Strohl.

**NECTARINES**  
**Established Cultivars:**

**Juneglo**  
(July 23) Heavy set on small tree (Citation rootstock), most fruits medium or below, some branches needed more thinning; cracking about 20%, split pits resulted in considerable rot. Excellent color, flavor good if a bit acid.

**Harko**  
(August 13) Moderate set, size medium to small; lacks color compared to Summer Beaut, dark maroon over greenish yellow, unattractive. Relatively few splits but some cracking, rot and mummified fruit. Flavor good, probably benefited by the early August heat. Fully evaluated, consider future discard.

**Not Yet Evaluated:**
Nectired  
(August 3) Moderate set, size medium or occasionally below, some split pits and resulting rot; excellent bright red color and very good flavor. Compare with Juneglo for best early nectarine.

Summer Beaut  
(August 13) Moderate set, size medium though somewhat variable, few split pits, little cracking but about 20-30% rot. Very good color and flavor; check for productivity as tree matures.

Mericrest  
(August 20) Light set, size medium, color attractive dark red, split pits about 30% with resulting late rot. Flavor better than Harko; check again in 94.
APRICOT RESEARCH 1993
Washington State University
Mount Vernon WA 98273
G.A. Moulton, J. King, and R.A. Norton

The 1993 season saw a return to the typical weather pattern of the Puget Sound region, with many cool damp days both at bloom time and in the period preceding harvest season. Apricots bloom earliest of all the stone fruit and thus are particularly sensitive to weather factors that affect pollination. In 1993 the full bloom period for the earliest blooming cultivars (varieties) such as Rival (March 16-18) was both cold and wet, and pollination was poor as a result. Conditions were better for later bloomers, as the daytime highs reached 58-60°F on March 19-22. Puget Gold, Harglow, and other late varieties were more productive as a result, although they will never equal the high productivity levels of trees grown in warmer areas.

Conditions in the period just before harvest were also not ideal, as cool cloudy weather continued from spring into summer, which may have contributed somewhat to delayed and uneven ripening. However, the first week of August, when the mid and late varieties were harvested, saw a mini-heat wave, and most varieties reached acceptable ripeness.

This year was the first evaluation of the apricot variety Flavor Delight, which produced a fair crop of tasty and attractive fruit. Aprium are the result of a complex apricot-plum cross; however, in our evaluations there appeared no distinction between the flavor and character of aprium fruit and those of standard apricot. Among the apricots, Harglow and Puget Gold were clearly the best, producing good quantities of high quality, sweet fruit. Harglow is particularly attractive with its strong deep-orange color lightly touched with blush. In 1990 a test plot of Puget Gold was planted, consisting of 18 trees on 3 rootstocks: Lovell, Mariana 4001, and St. Julien A. These trees are now in mature production, and noticeable differences in productivity were observed, although the less productive trees did not seem to be related to the rootstock. Tree survival, however, was a different story. Of the 6 trees on Lovell, 5 were healthy and fruiting; on Mariana 4001, 4 trees were healthy, 1 died and 1 was taken over by rootstock after the top became diseased. St. Julien A had the poorest record; only 2 trees were healthy, 2 died, and 2 more are diseased and unlikely to survive. In 1995 we hope to have a final evaluation of this plot including data on productivity and tree vigor.

A summary of the different varieties and their performance follows, listed in harvest order (1993 harvest dates in parenthesis):

<table>
<thead>
<tr>
<th>Established Cultivars</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rival</strong></td>
</tr>
<tr>
<td><strong>Harglow</strong></td>
</tr>
<tr>
<td><strong>Puget Gold</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Not Fully Evaluated:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Royal Rosa</strong></td>
</tr>
</tbody>
</table>
Schilgen Sdlg. (July 12) Set light, fruit large, attractive, sweet and very firm fleshed. Was scheduled for discard as tree had not fruited since planting in 1985; may be slow to begin bearing. Re-assess in 94.

Flavor Delight Aprium (July 20) Moderate set, fruit medium size, yellow with about 20% red-orange blush, many showing dry cracks susceptible to rot. Yellow-orange flesh, firm and somewhat stringy; like apricot in appearance and flavor.

PA 7005-2 (July 30) Light set on young trees, size medium or slightly larger, attractive color, good flavor. Trees may be more productive as they mature.

Goldenglow Genetic dwarf, not yet fruiting, in landscape garden

Katy Young tree not yet fruiting

Rouge D'Or One fruit only, unable to evaluate this year

Peach X apricot No fruit

Provisional (final year - probable discard):

Gold Strike (July 12) Tested as PA 7221-1. Set poor, size medium-large, attractive red blush 10-20%, good sweet flavor. Not productive, final evaluation in 94.

Harcot (July 23) Set very light on large vigorous tree, large fruit, ripens unevenly and tends to drop. Very good flavor but too few fruit. Possible discard, fully evaluated.

Sunglo (July 30) Moderate set, size medium to large, excellent color, attractive dark orange fruits with dense sweet flesh. Trees are diseased, some limbs breaking out. Possible discard, fully evaluated.

Alfred (August 3) Light set on mature healthy trees, set is uneven throughout the tree with some branches much more productive than others. Fruit is small, yellow, with a good sweet flavor; texture a bit stringy in some. Not productive, possible discard.

Discard:

Harlayne (August 5) Poor set on small, runty tree; fruits medium size or below, some cracking, color speckled 10-20% red over orange, not highly flavorful. Fully evaluated, probable discard.
APPLES
BLOOM DATES 1993

Cv. Full Bloom

Gravenstein, Red 04/19/93
Davies 04/21/93
AA 44 04/22/93
Alkmene 04/22/93
C Vagnon Flocher 04/22/93
Compact Mac (Wijcik) 04/22/93
Discovery 04/22/93
Empire 04/22/93
Golden Mack 04/22/93
Mott Pink 04/22/93
Orin 04/22/93
Ortley 04/22/93
Sunset 04/22/93
Winterstein 04/22/93
Acey Mac 04/25/93
Arlet 04/25/93
Ashmead's Kernel 04/25/93
BC Red Sdlg. 04/25/93
Bramley's Sdlg. 04/25/93
C Bellflower 04/25/93
C Pomme Gris 04/25/93
Cascade 04/25/93
Centennial 04/25/93
Devonshire Quarrenden 04/25/93
Dexter 04/25/93
Earligold 04/25/93
Egremont Russet 04/25/93
Elstar 04/25/93
Freyberg 04/25/93
Gala, Royal 04/25/93
Geneva Early 04/25/93
Liberty 04/25/93
Macfree 04/25/93
Melrose (Melrouge) 04/25/93
Merton Russet 04/25/93
NJ 107 04/25/93
NY 428 04/25/93
NY 61345-2 04/25/93
Red June 04/25/93
Redcot 04/25/93
Redmax 04/25/93
Shay 04/25/93
Stearns 04/25/93
Sunrise 04/25/93
Tydeman's Late Orange 04/25/93
Virginia Gold (Perkins) 04/25/93
NY 652 04/26/93
Nova EasyCro 04/26/93
Gala, Scarlet 04/27/93
NJ 109 04/27/93
Takane 04/27/93
AA 18 04/28/93
C Brown's Apple 04/28/93
C Geeveston Fanny 04/28/93
Charles Ross Sdlg. 04/28/93
Delbard Jubilee 04/28/93
Duchess of Oldenburg 04/28/93
Early Dawn 04/28/93
Jonafree 04/28/93
July Tart 04/28/93
Lysgolden 04/28/93
Melrose, Standard 04/28/93
Moore X apple 04/28/93
NJ 105 04/28/93

Note: C indicates circa apples
<table>
<thead>
<tr>
<th>Variety</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJ 116</td>
<td>04/28/93</td>
</tr>
<tr>
<td>NJ 56</td>
<td>04/28/93</td>
</tr>
<tr>
<td>NJ 96</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Novamac</td>
<td>04/28/93</td>
</tr>
<tr>
<td>NY 651</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Prima</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Redtree</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Rhode Island Greening</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Senshu</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Test Apple #440 (Hilltop)</td>
<td>04/28/93</td>
</tr>
<tr>
<td>Aalmo Sdlg.</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Aroma</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Benham</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Braeburn</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Anere de Berthcourt</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Bulmer's Norman</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Marachel</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Muscat de Berney</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Muscat de Lense</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Reine des Pommes</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Sweet Coppin</td>
<td>04/30/93</td>
</tr>
<tr>
<td>C Tremlett's Bitter</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Cox, Cherry</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Cox, Red</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Cox's Orange Pippin</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Crimson Beauty</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Drackenstein</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Elan</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Florina</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Fuji, Akifu #1</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Fuji, Standard</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Gala, Fulford</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Gala-go-red</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Ginger Gold</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Glocken</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Gloster</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Gnabasik Sdlg.</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Golden Noble</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Hatsuaki</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Himekami</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Honey</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Honeycrisp</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Hubbardston</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jimmi (Tuell Sdlg.)</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagold</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagold, DeCoster</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagold, New</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagold, Nicobel</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagold, Red</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagored</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagored 369</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Jonagored 9613</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Karen Schneider</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Karmijn de Sonnville</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Keepsake</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Kent</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Kotoku</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Malbon Sdlg.</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NJ 100</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NJ 103</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NJ 104</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NJ 112</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NJ 90</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NJ 99</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NY 315</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NY 617</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NY 632</td>
<td>04/30/93</td>
</tr>
<tr>
<td>NY 674</td>
<td>04/30/93</td>
</tr>
<tr>
<td>Opalescent</td>
<td>04/30/93</td>
</tr>
</tbody>
</table>
Russet King 04/30/93
Sansa 04/30/93
Sayaka 04/30/93
Scarlet 04/30/93
Shamrock 04/30/93
Shizuka 04/30/93
Spigold 04/30/93
Suntan 04/30/93
Sweet Sixteen 04/30/93
Tsugaru, Natsuka 04/30/93
Apple Babe 05/01/93
Blenheim Orange 05/01/93
C Michelin 05/01/93
C Peau de Vache 05/01/93
Cox, Korallo 05/01/93
Cox, Queen 05/01/93
Fiesta 05/01/93
Golden Supreme 05/01/93
Jomured 05/01/93
Kogetsu 05/01/93
Michinoku 05/01/93
Nebuta 05/01/93
NJ 55 05/01/93
Reinette Gris du Canada 05/01/93
Rubinstar 05/01/93
Tsugaru 05/01/93
Yoko 05/01/93
C Chisel Jersey 05/02/93
C Cow Jersey 05/02/93
C Harry Masters' Jersey 05/02/93
Cornish Gilliflower 05/02/93
Fuji, Yataka 05/02/93
Jonagored 9614 05/03/93
Tsugaru, Homei 05/03/93
Dulcet 05/04/93
Boskoop (Schmidt Hubsch) 05/05/93
C Dabinett 05/05/93
C Feuillard 05/05/93
C Kingston Black 05/05/93
Daliter 05/05/93
Jonagold, King 05/05/93
Daldest 05/07/93
Stirling 05/07/93
C Bedan 05/10/93

ORGANIC APPLE PLOT
BLOOM DATES 1993

Cv. Full Bloom

Dayton 04/25/93
Williams' Pride (Coop 23) 04/25/93
PWR-37T-131 04/26/93
HFR-22T-173 04/27/93
NY 74840-1 04/27/93
NY 75441-67 04/27/93
CQR-10T-17 04/28/93
Liberty 04/28/93
NY 61345-2 04/28/93
NY 66305-139 04/28/93
NY 75414-1 04/28/93
CLR-12T-161 04/29/93
HER-4T-20 04/29/93
NY 61343-1 04/29/93
NY 73334-35 04/29/93
NY 75413-30 04/29/93
Coop 28 04/30/93
HCR-14T-125 04/30/93
HER-10T-108 04/30/93
NY 65707-19 04/30/93
NY 66305-289 04/30/93
NY 66325-139 04/30/93
NY 73334-57 04/30/93
Prima 04/30/93
PSER-11T-27 04/30/93
Chehalis 05/01/93
CLR-13T-45 05/01/93
CMR-2T-13 05/01/93
Coop 25 05/01/93
Coop 29 05/01/93
HER-4T-16 05/01/93
HWR-19T-18 05/01/93
NY 74828-12 05/01/93
PAR-12T-101 05/01/93
PAR-14T-238 05/01/93
PAR-4T-215 05/01/93
PSWR-11T-48 05/01/93
Redfree 05/01/93
TNR-10T-11 05/01/93
CLR-13T-49 05/02/93
HER-3T-175 05/02/93
Novamac 05/02/93
CLR-20T-14 05/03/93
HER-3T-139 05/03/93
Jonafree 05/03/93
Shay (Macshay) 05/03/93

BLOOM DATES 1993
APRICOTS

Cv. Full Bloom

Peach x cot 03/16/93
Gold Strike 03/16/93
Royal Rosa 03/16/93
Rival 03/16/93
Seedling cot 03/16/93
Harcot 03/16/93
Flavor Delight Aprium 03/16/93
Katy 03/20/93
Rouge D'Or(Norton) 03/20/93
Blenril 03/20/93
Harglow 03/21/93
NY 544 03/21/93
PA 7005-2 03/21/93
Harlayne 03/25/93
Sunglo 03/25/93
Puget Gold 03/25/93
Alfred 03/25/93

BLOOM DATES 1993
CHERRY

Cv. Full Bloom

NY 6476 04/08/93
Early Burlat 04/08/93
Moreau 04/08/93
NY 11390 04/15/93
Viscount 04/15/93
Tulare 04/15/93
Merla 04/15/93
Rainier 04/15/93
Utah Giant 04/15/93
Stella 04/15/93
Van 04/15/93
Starkrimson 04/15/93
Kristin 04/15/93
Sweet Anne 04/15/93
Emperor Francis 04/15/93
Merpet 04/15/93
Cavalier 04/15/93
Lapins 04/15/93
Hardy Giant 04/15/93
Compact Stella 04/15/93
Angela 04/15/93
King 04/15/93
Bing 04/18/93
Bada 04/18/93
Craig's Crimson 04/20/93
Compact Lambert 04/22/93
Hedelfingen 04/22/93
Columbia 04/25/93
Lambert 04/25/93
Montmorency 04/25/93
PC 6680-1 04/25/93
NY11375 04/28/93
Sam 04/28/93

BLOOM DATES 1993
CHERRY

Full Bloom

NY 6476 04/08/93
Early Burlat 04/08/93
Moreau 04/08/93
NY 11390 04/15/93
Viscount 04/15/93
Tulare 04/15/93
Merla 04/15/93
Rainier 04/15/93
Utah Giant 04/15/93
Stella 04/15/93
Van 04/15/93
Starkrimson 04/15/93
Kristin 04/15/93
Sweet Anne 04/15/93
Emperor Francis 04/15/93
Merpet 04/15/93
Cavalier 04/15/93
Lapins 04/15/93
Hardy Giant 04/15/93
Compact Stella 04/15/93
Angela 04/15/93
King 04/15/93
Bing 04/18/93
Bada 04/18/93
Craig's Crimson 04/20/93
Compact Lambert 04/22/93
Hedelfingen 04/22/93
Columbia 04/25/93
Lambert 04/25/93
Montmorency 04/25/93
PC 6680-1 04/25/93
NY11375 04/28/93
Sam 04/28/93

BLOOM DATES 1993
PEACH/NECTARINE

Type  Cv.  Full Bloom
S  Harrow Diamond 03/27/93
S  Mid-Pride 03/27/93
NS  Candor 03/30/93
S  Strohl LCR 03/30/93
NS  Cole LCR 03/30/93
NS  Zachary Taylor 03/30/93

S = showy bloom
NS = non-showy
<table>
<thead>
<tr>
<th>Variety</th>
<th>Bloom Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harken</td>
<td>03/30/93</td>
</tr>
<tr>
<td>Stark EarliGlo</td>
<td>03/30/93</td>
</tr>
<tr>
<td>Stark Early Loring</td>
<td>04/02/93</td>
</tr>
<tr>
<td>Delp Hale</td>
<td>04/02/93</td>
</tr>
<tr>
<td>Sentry</td>
<td>04/02/93</td>
</tr>
<tr>
<td>Bellaire</td>
<td>04/02/93</td>
</tr>
<tr>
<td>Redhaven</td>
<td>04/02/93</td>
</tr>
<tr>
<td>Harcrest</td>
<td>04/02/93</td>
</tr>
<tr>
<td>Early Charlotte</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Brighton</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Rosy Dawn</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Etter</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Vera</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Sweet Haven</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Harbelle</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Nectired nect.</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Roaf</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Nerland LCR</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Leiser (Zeiger)</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Tuma LCR</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Early Glory</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Rombough almond</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Vanity</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Juniglo nect</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Harko nect.</td>
<td>04/10/93</td>
</tr>
<tr>
<td>Mericrest</td>
<td>04/10/93</td>
</tr>
<tr>
<td>China Sdq.</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Double Jewel</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Summer Beaut</td>
<td>04/15/93</td>
</tr>
</tbody>
</table>

**Pears, European**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Bloom Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spalding</td>
<td>04/09/93</td>
</tr>
<tr>
<td>Clapp Favorite</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Passe Crasanne</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Tim Harris</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Clapp Favorite (Bennett strain)</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Roosevelt</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Beurre Alexandre Lucas</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Passe Crasanne Rouge</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Rescue</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Bosc</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Sirrine</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Cascade</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Starkrimson</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Conference</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Red D'Anjou</td>
<td>04/15/93</td>
</tr>
<tr>
<td>HW 605</td>
<td>04/15/93</td>
</tr>
<tr>
<td>Orcas</td>
<td>04/19/93</td>
</tr>
<tr>
<td>Red Sensation Bartlett</td>
<td>04/19/93</td>
</tr>
<tr>
<td>Harrow Delight</td>
<td>04/19/93</td>
</tr>
<tr>
<td>Highland</td>
<td>04/19/93</td>
</tr>
<tr>
<td>Comice</td>
<td>04/19/93</td>
</tr>
<tr>
<td>Crimson Gem Comice</td>
<td>04/23/93</td>
</tr>
<tr>
<td>Red Comice (Raintree)</td>
<td>04/23/93</td>
</tr>
<tr>
<td>HW 606</td>
<td>04/23/93</td>
</tr>
</tbody>
</table>

**Pears, Asian (Nashi)**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Bloom Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tsu Li</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Ya Li</td>
<td>04/05/93</td>
</tr>
<tr>
<td>UC 12-44</td>
<td>04/05/93</td>
</tr>
<tr>
<td>UC 17-63</td>
<td>04/05/93</td>
</tr>
<tr>
<td>Yoinashi</td>
<td>04/10/93</td>
</tr>
<tr>
<td>UC 13-53</td>
<td>04/12/93</td>
</tr>
</tbody>
</table>
Hamese #1 04/12/93
UC 8-46 04/12/93
Shinseiki 04/15/93
Chojuro 04/15/93
Shinsui 04/15/93
Hokkaido 04/15/93
Koyama 04/15/93
Mishirasu 04/15/93
Nijisseiki 04/15/93
Imamura Aki 04/15/93
Ichiban Nashi 04/15/93
Yongi 04/18/93
Kosui 04/18/93

BLOOM DATES 1993
PLUMS

Full Bloom

Ume 03/16/93
Shiro 03/25/93
Beauty 03/25/93
Methley B-20 03/25/93
Simka 03/25/93
Methley FL-1-1 03/25/93
Methley 03/25/93
Santa Rosa 03/27/93
Flavor Queen Pluot 03/27/93
Au-Crimson 03/29/93
AR-13 03/30/93
Laroda 04/01/93
Flavor Supreme Pluot 04/01/93
Au-Roadside 04/01/93
Schultz 04/05/93
Redheart 04/05/93
Seneca 04/05/93
Verity 04/05/93
PP6973-2 04/05/93
Biringer 04/10/93
CB-68 04/10/93
Plum 4285 04/10/93
CB-15 04/10/93
Valor 04/10/93
CB-28 04/10/93
Bruce 12-4 04/10/93
Early Italian 04/10/93
Stanley 04/10/93
Frontier 04/10/93
Songold 04/15/93
Candee 04/15/93
NY 858 (Mirabelle) 04/15/93

This is a Mirabelle clone from Geneva