

TREE FRUIT RESEARCH 1995

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APPLE RESEARCH 1995
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In 1995 the weather at bloom time was relatively warm, with daily highs ranging from mid 50s to mid and upper 60s, and little or no precipitation. Sufficient bee activity was present for effective pollination, and fruit set in general was good. From May through September the weather was warm and dry for most of the season, so irrigation as well as fertigation were provided on a regular schedule. Despite a few rainy spells in late September and October, fruit continued to ripen well, and some late varieties remained on the tree until November with very good quality.

This year several young trees produced fruit in quantities sufficient for evaluation, and look quite promising as future possibilities. Two highly colored red sports of Jonagold, **Rubinstar** and **Jomured**, performed very well in terms of both appearance and flavor. **Rubinstar** carried a full crop of large fruit with allover blush red color. **Jomured** did not color as early as **Rubinstar**, but by harvest it had developed good color. Some trees in their first year of fruiting were also potentially interesting. **Beni No Mai**, an early red variety from Japan, set well and had large attractive fruit with sweet flavor. **Princess**, from France, is a medium-sized apple with allover golden russet, and **RubINETTE**, a Cox type, seemed to size well and had excellent flavor. We will be looking at all of these, and at the new selections from the BC and New York breeding programs, in the coming season.

In the mature orchards, we continue to see good effects of the irrigation/fertigation system. Most varieties were very productive, successfully carrying heavy crops of high quality fruit. **Sunrise** and **Aroma** again stood out among the early apples. Though color in **Sunrise** was not as red as in 1994, flavor remained very good. **Aroma** proved this year that it can carry a heavy load of fruit, and in fact seemed to improve in quality with somewhat smaller apples. **Fiesta** remains consistently excellent, and the fruit large, well colored, and high in flavor even when cropped very heavily. The **Gala Fulford** strain colors 7-10 days earlier than either **Royal** or **Scarlet Gala**, and its bright blush is very attractive. In 1995 we also planted **Galaxy** and **Ultrared Gala** strains for future comparison, but they are not yet fruiting. Several of the late apples were very good this year; **Braeburn**, **Enterprise** and **Florina** all did very well. **Fuji** trees were somewhat overloaded, and fruit quality did seem to be affected. **Orin**, a yellow apple from Japan, was better than usual this year, but it is marginal at best for our area.

Notes on the performance of specific varieties appear below, listed in harvest order within each category (1995 harvest dates in parentheses):

Established Cultivars (3 or more years fruiting):

- | | |
|-------------------------|---|
| Earligold | (August 8) Heavy set, size variable, most medium, attractive, flavor good, mild subacid. |
| Sunrise | (August 10) Heavy set, very productive, size medium and above, less red color than in 1994, flavor subacid to sweet and very refreshing. |
| Empress (NY 651) | (August 10) Very heavy set, size small, excellent flavor, good color and finish; would have sized better with harder thinning. |
| Mott Pink | (August 25) Moderate-heavy set, size below medium, uniform, yellow color with pale pink underblush when ripe, pink-tinted flesh, tart flavor. |
| Alkmene | (August 25) Heavy set, size medium, fairly uniform, excellent color, some sunburn; flavor excellent, sprightly, subacid; no scab or mildew. |
| Red Gravenstein | (August 25) Moderate set, size medium and above, good color and excellent flavor. |

- Redcort** (August 25) Red sport of Cortland, moderate set, size above medium, good color and flavor, subacid to sweet. Mildew heavy on some branch tips.
- Tsugaru, Homei** (August 25) Moderate-heavy set, size above medium, uniform, excellent red color, juicy, flavor sweet, seems better adapted than standard and Natsuka strains.
- Aroma** (August 30) Heavy set, size medium, uniform, attractive pinkish red, little scab or russet; flavor sweet, refreshing, tends not to hold up in long storage.
- Compact Mac** (September 5-12) Wijcik strain, growth strongly upright with small side branches; heavy set, size medium, uniform, attractive, tart lively flavor.
- Fiesta** (September 7-21) Selective color pick (3 picks); heavy set, productive, size above medium, color excellent, very good flavor, crisp and subacid; storage 3-5 months, retains flavor very well.
- Honeycrisp** (September 7-21) Heavy set, size large, uneven color, most about 50% red stripe over yellow, extended pick for best ripeness, some sunburn; flesh crisp and juicy.
- Gala, Fulford** (September 12-21) Selective pick by color 9/12. Heavy set, size medium and above, excellent blush red color, very attractive, little russet, dense flesh and sweet rich flavor typical of Gala.
- Cox's Orange Pippin** (September 14) Heavy set on low, non-vigorous tree, fruit size small, uniform, color less red than in 1994, firm dense flesh with rich subacid flavor.
- Arlet** (September 14) Heavy set, size medium, excellent red color, good finish, flavor good, lively, subacid to sweet, very firm.
- Karmijn de Sonnaville** (September 14-19) Heavy set, size medium to large, color good, some water core and sunburn but much better than 1994. Excellent flavor, quite tart off tree then rich and full after mellowing in storage.
- Elstar** (September 14-21) Very heavy set, most fruits medium size, color and finish good, flavor subacid to tart at harvest, mellows somewhat in storage, not at its best this year.
- Daliest** (September 21) Red sport of Elstar, heavy set, size medium and below, fairly uniform, excellent color and finish; very good sweet-tart flavor.
- Red Cox** (September 21) Moderate-heavy set, size below medium, very uniform, typical Cox shape, very good color, good flavor, sprightly subacid.
- Cherry Cox** (September 21) Moderate-heavy set, tree more vigorous than standard Cox, fruit size medium, color good but less red than Queen Cox, very good flavor.
- Queen Cox** (September 21) Heavy set, size medium or below, fairly uniform, excellent color, firm dense flesh, good flavor. Tree habit better than standard Cox.
- Sayaka** (September 21) Heavy set, size large to very large, excellent color, flavor good, sweet, very juicy and crisp. Too large for commercial dessert uses.
- Bramley's Seedling** (September 21) Moderate set, size medium to large, quite variable; color fair to good, very firm, juicy, flavor tart for fresh eating, excellent culinary. Some sunburn, codling moth damage about 20% of fruit.

- Gala, Scarlet** (September 21-28) Selective color pick (2 picks); moderate-heavy set, size medium or slightly above, excellent color and flavor, juicy and sweet.
- Jonagold, DeCoster** (September 21-28) Selective color pick, first pick about 30% of fruit, heavy set, size above medium to large, good color both early and late pick, excellent flavor, subacid to sweet, juicy, crisp.
- Freyberg** (September 28) Heavy set, fruit below medium to small, good color, some sunburn and light russet, excellent flavor, juicy and sweet. Needed harder thinning.
- Hatsuaki** (September 28) Heavy set, size medium to large, some fruit not well colored, flavor sweet, bland, not for long storage.
- Sunset** (September 28) Heavy set, variable ripening, small, uniform fruit; unusual color rather attractive, predominant yellow-orange striped red, flavor good, subacid to tart.
- Jonagold, Nicobel** (September 28-October 5) Selective color pick, first pick about 40% of fruit, best color not as red as Jonagored or DeCoster but very attractive, heavy set, size large, very good flavor.
- Jonagold, New** (September 28-October 5) Selective color pick, first pick about 70% of fruit, bicolor rather than red predominant (color not redder than standard Jonagold), heavy set, size medium to large, very good flavor.
- Ashmead's Kernel** (September 28-October 10) Heavy set, size medium or slightly below, uniform, color good, allover light russet with occasional orange blush, very firm flesh, excellent subacid flavor.
- Gala, Royal** (September 28-October 5) Selective color pick, about 60% on 9/28; heavy set, size medium, color good on most fruit but inferior to Fulford strain, excellent flavor, sweet.
- Melrose** (September 28-October 5) Selective color pick, about 50% on 9/28. Heavy set, size above medium, good color and very little russet, flavor excellent; trees very productive.
- Daliter** (October 5) Red sport of Elstar, very heavy set, size medium and below, fairly uniform, color acceptable but less good than 1994, excellent flavor, some russet.
- Delbard Jubilee** (October 5) Very heavy set, size medium, color poor and did not develop till late, very crisp and juicy, sweet-tart flavor, refreshing; some sunburn, russetting. This variety seldom has good color, and seems to need special conditions that don't often occur here.
- Empire** (October 5) Moderate-heavy set, size medium, excellent color and flavor, very firm, good keeper; seems to do better here if given proper nutrition.
- Boskoop, Red** (October 5-12) Schmitz Hubsch strain. Selective color picks. Heavy set, size above medium to large. This tree can carry a heavy load of fruit without losing size and quality. Good red color, tart to acid flavor at harvest, excellent culinary, good keeper.
- Jonagored** (October 12) Selective pick about 75% of fruit, final pick 10/19. Heavy set, size above medium to large, color excellent, nearly 100% red; flavor very good, subacid to sweet, full rich flavor after 2 months' storage, keeps well to January.
- SunCrisp (NJ 55)** (October 12-19) Very heavy set, size medium or slightly above, fairly uniform, color and finish good, attractive blush, very firm and crisp, flavor subacid. Responds well to heavy fruit load.

- Fuji, Yataka** (October 26-November 9) Selective color pick about 30% on 10/26, final pick 11/9. Very heavy set, size below medium to medium, color and finish good on most fruit. Slightly ahead of standard Fuji in coloring but main harvest same. Might have had better size with harder thinning.
- Braeburn** (October 26-November 21) Selective color pick about 20% on 10/26, late pick 11/21. Moderate-heavy set (after very poor set in 1994), size above medium, fairly uniform, color variable, most fruits about 60% red color by harvest, flavor very good, crisp, firm.
- Fuji, Akifu #1** (November 2-6) Very heavy set, size below medium to medium, color and appearance same as standard Fuji; might have had better size with harder thinning.
- Fuji, Standard** (November 2-9) Very heavy set, size below medium to medium, could have been thinned a bit more for larger fruit, quality was somewhat reduced. Color good on most fruit, light pinkish red, finish very good, flesh crisp, sweet.
- Orin** (November 9) Moderate-heavy set, size medium, good yellow color, finish good though lenticels are conspicuous, juicy, flavor excellent, sweet-tart, best left on tree until late.

Not fully evaluated (performance not yet established or inconsistent, includes breeding selections):

- AA 49** (July 6-10) Heavy set on small tree, size below medium, color good, red or red-orange stripe over yellow; very tart then softens quickly, a real 5-minute apple. Check again in 1996.
- Fu Shau** (August 3) First fruiting, moderate set, size medium-small, attractive yellow skin with conspicuous lenticels, flavor good, sprightly subacid.
- NJ 107** (August 10) Heavy set, size medium to large, attractive yellow, light blush, flavor subacid, only fair compared to NJ 116 or Sunrise.
- NY 652** (August 12) Heavy set, size medium, uniform, some pre-harvest drop, good red color, very good flavor, somewhat tart and very refreshing.
- Biringer #101** (August 25) Moderate set, size medium, excellent red color, attractive, very firm, crisp, good sprightly flavor; looks good so far, check storage life in 1996.
- Sansa** (August 25) Moderate set, size medium, attractive color, clear yellow striped 50-80% red, very good flavor, sweet, pleasant.
- Ginger Gold** (August 31) Moderate set, size variable, most medium, yellow with occasional red stripe, flavor subacid, somewhat bland compared to 1994, check in 1996.
- Beni No Mai** (September 5) First fruiting, heavy set, size large, excellent bright red color, smooth finish, crisp, juicy, sweet flavor.
- BC 11W-19-18** (September 7) First fruiting, moderate-heavy set, size above medium, color good, attractive carmine red darkens to wine at late picking, some russetting, firm, crisp, good subacid flavor, hangs very well on tree. Cross of Discovery x Summerred from Summerland.
- Redmax** (September 7) Heavy set, size medium to small, good overall red color, flavor subacid to tart, keeps good flavor in storage, Mac type seems well suited to this area.
- NJ 99** (September 7) Heavy set, size large, very uniform, attractive, good smooth finish, flavor subacid, inferior to Sunrise; looks better than it tastes.

- NJ 112** (September 7) Very heavy set, size below medium to small, round, uniform, excellent 90-100% red color, smooth finish, flesh very hard and crisp, flavor tart.
- Borggolden** (September 7) First fruiting, moderate set, size large, yellow color rather dull, finish unattractive, firm, juicy, good sweet flavor.
- BC 11W-12-85** (September 7) First fruiting, moderate set, size medium to large, excellent red color, very firm, flavor sweet, some water core and bitter pit, hangs well on tree about 1 month. Cross of Summerred x Discovery from Summerland.
- X 3191** (September 14) First fruiting, very few fruit, medium size, roundish oblate, solid red blush and stripe, juicy, flavor mild subacid.
- Arkcharm (AA 18)** (September 14) Moderate set on young tree, size medium to large, attractive yellow color with pinkish orange blush, excellent finish, firm, juicy, mild subacid flavor. NOTE: does not seem to match description in references, may be mislabeled, check again in 1996.
- Golden Supreme** (September 14) Heavy set, size variable, medium to large, attractive yellow color, good finish, good flavor, sweet, refreshing.
- NY 617** (September 14) Heavy set, size large, color poor, much less than 1994, very firm, good sweet-tart flavor; too large for eating out of hand, NY recommends for processing.
- Stellar (AA 62)** (September 14) Moderate set on young tree, size medium or slightly below, good yellow color definite conic shape, good finish, rather tart flavor. Check storage life in 1996.
- Senshu** (September 14-21) Heavy set, size medium, good red color, slight russet; flavor sweet, rather bland.
- Russet King** (September 20) Moderate-light set, size large to very large, allover russet, light brown with some attractive red undertone, very firm, crisp, lively subacid flavor. May be biennial, check again in 1996.
- Rubinstar** (September 21) Red strain of Jonagold. Selective color pick (about 75% of fruit), heavy set on vigorous young trees, size large, uniform, very attractive allover red color 90-100% develops early, good finish, crisp, juicy, very good flavor. Looks promising.
- NY 428** (September 29) Heavy set, size medium, good dark red color, firm flesh, subacid, refreshing, excellent long storage. Check in 1996 if NY will name and introduce it.
- Acey Mac** (October 5) Heavy set, size medium to small, color and finish good, flavor very good, tart, lively. Much later ripening this year than in 1993 and 1994, check again.
- Princess** (October 5) First fruiting, very few fruit, size medium or slightly below, shape roundish conic, allover golden russet is attractive, very firm texture, subacid to sweet.
- NY 486** (October 5) First fruiting, heavy set, size medium and above, Golden Delicious type, good finish though lenticels conspicuous, flavor subacid. Try later sample in 1996.
- RubINETTE** (October 5) First fruiting, moderate set, size medium, uniform, roundish oblate, similar to Cox, bicolor yellow striped and blushed dull red, firm dense flesh, excellent sweet flavor.
- Delbardestivale** (October 5) First fruiting, moderate set, size above medium, excellent allover dark red color, attractive finish, good flavor, subacid to sweet.

- AA 59** (October 5) First fruiting, moderate set, size medium to large, yellow, attractive finish, flavor good, mild subacid.
- Beni Tsugaru** (October 5) First fruiting, moderate set, medium size, uniform, good red color, some russet, good flavor, sweet.
- Jomured** (October 5) Moderate-heavy set, young vigorous trees, size large, fairly uniform, very good red color, will reach 90-100% in most fruits when selective picking, excellent flavor.
- Jonagored 369, 9613, 9614, 9631** (October 5-12) All strains very similar; heavy set, large fruit, fairly uniform, red color rather late developing, not as good as Rubinstar or standard Jonagored, check again in 1996 to see if there are distinct differences.
- Jonagold, King** (October 5) Also called **Jored**. Heavy set, size large, uniform, red color rather late developing but attractive, up to 90% red color at final pick; very good flavor, firm and crisp. Compare with other Jonagold strains in 1996.
- BC 8NE-7-72** (October 5) First fruiting, moderate set, most medium size, color pinkish red, variable size and color, considerable russetting, irregular shape, flesh very firm and crisp, good flavor, subacid to sweet. Cross of Maigold x Splendour from Summerland.
- Tydemans' Late Orange** (October 5) Moderate set, size medium, similar to Cox, color good, dense firm flesh with strong subacid flavor.
- Jimmi (Tuell sdlg)** (October 5) Heavy set, size above medium, fairly uniform, excellent 100% red color, attractive, smooth finish, mild sweet flavor, possibly worth introduction.
- NY 688** (October 5) Moderate-heavy set on young trees, medium size, excellent bright red color, smooth shiny finish, attractive; very firm and crisp, good subacid flavor.
- NJ 90** (October 5) Heavy set, size above medium, good wine red color, very firm and juicy, flavor lively subacid, better than in 1994; check with NJ as to its future status.
- NJ 100** (October 12) Very heavy set, size above medium, uniform, excellent yellow color and finish; crisp and juicy, flavor mild subacid, acceptable but not outstanding; check with NJ as to its future status.
- BC 8S-27-2** (October 12) Moderate set on young tree, medium size, very attractive, 100% bright red color, good finish, firm, good sweet flavor, Splendour x Gala cross looks very nice.
- Reinette Grise du Canada (Canada Grise)** (October 26) Heavy set on young trees, some preharvest drop, size medium, flattish in shape, attractive russet over light brown skin, hard dry flesh, very tart at harvest but mellows in storage, good till February. Mostly for culinary use.

New Plantings (not yet fruiting):

Baujade

- BC 8C-5-62** (Golden Delicious x Grimes Golden)
- BC 8C-28-27** (Delicious x Golden Delicious)
- BC 8S-27-43** (Splendour x Gala)
- BC 8S-27-51** (Splendour x Gala)
- BC 8S-29-18** (Gala x Splendour)
- BC 8S-31-56** (Gala x Splendour)
- Crimson Spire** (Colonnade)

Ellison's Orange
Emerald Spire (Colonnade)
Empire, Thome Red
Fuji, Red, BC#2
Fuji, Red, Tac 114
Gala, Galaxy
Gala, Ultrared
Golden Glory
Greensleeves
Jonagold, Hein
Jonica
Marshall Mac
Mutsu
Pioneer Mac
Pixie
Runkle
Ultragold

Provisional (final year - probable discard):

- NJ 116 (August 3) Heavy set, size medium, attractive yellow with occasional blush, good finish, flavor tart, inferior to Sunrise.
- Monark (AA 44) (August 5) Moderate-heavy set on small young tree, size medium, attractive orange-red stripe over yellow, flavor rather tart at harvest; storage poor. Check again in 1996.
- Golden Noble (August 31) Moderate set, size large, rather irregular shape, russetting, very crisp, flavor very tart at harvest, possible culinary.
- Himekami (September 7) Heavy set, size small to medium, fairly uniform, poor color, firm and crisp, flavor sweet, bland.
- Michinoku (September 7) Moderate set, size medium, good dark red color, russetting in cavity, flavor mild and sweet at harvest, quickly becoming bland in storage, potential discard.
- Sweet Sixteen (September 14) Heavy set, size variable, most large, color rather pale, very firm flesh, sweet, distinct anise flavor; no commercial potential, flavor not to the general taste.
- Cornish Gilliflower (September 14) Moderate set, fruit size large, sprawling leggy tree, color unattractive, dull purplish red, flavor sweet; year-to-year quality is unreliable, probably of interest to variety collectors only.
- Early Dawn (September 20) Moderate-heavy set on young tree, size variable, most medium, color good, red-orange stripes on yellow, firm very juicy flesh, flavor rather tart, tends to drop; no outstanding qualities to recommend it.
- Elan (September 21-28) Very heavy set, size medium to large, very attractive soft red color especially good in late pick, juicy crisp texture, flavor good, better than 1994.
- Egremont Russet (September 28) Moderate-heavy set, size medium, very unattractive, dull yellow skin netted with russet, dark rough lenticels, very firm dense flesh, flavor subacid.
- Shizuka (September 28) Heavy set, size large, good yellow color, good finish, occasional copper blush, crisp and juicy, flavor subacid to sweet.

NY 674 (September 30) Moderate-heavy set, size medium and above, excellent color, attractive bright red and orange stripe, flavor good, sprightly subacid; check with New York to determine its future status.

Lysgolden (October 5) Heavy set, size medium or slightly above, Golden Delicious type, color and finish good, flavor acceptable but less than best, fully evaluated.

Discard:

Discovery (July 26) Heavy set on non-vigorous tree, size small to medium, excellent color and lively flavor; stores poorly, cracking can be bad some years.

Red June (July 27-August 7) Heavy set, medium size, ripens over extended period, bright red color but highly colored fruits go soft and mushy very quickly, flavor tart then turning bland; mildew susceptible.

Cascade (August 25-31) Moderate set on small trees, size medium, ripens unevenly, doesn't color well until just before dropping; juicy, rather melting flesh, mild refreshing flavor, not outstanding.

Nebuta (August 31) Very heavy set, size small to medium, attractive dark red color, smooth finish, flavor sweet but rather bland, lacks sparkle compared to Empress, Sunrise; looks better than it tastes, poor storage.

Laxton's Superb (August 31) Heavy set, size small, attractive bright red fruit, very juicy but softens quickly, flavor mild subacid, rather bland, no storage life.

Virginia Gold (August 31) Possibly not true name; moderate set, fruit size medium, variable ripening, color less red than 1994, flavor subacid to sweet, flesh tends to soften, aromatic "old-time" taste can be disagreeable especially after storage.

Charles Ross (September 7) Heavy set on small, runty trees, fruit large to very large, some sunburn, color bright red striped over yellow, flavor fair, subacid, mildly refreshing. Too big for eating out of hand, not likely to be introduced.

Dexter (September 14) Moderate set, size very large, green, lumpy, unattractive, bland sweet flavor, novelty value only due to large size.

Hubbardston Nonesuch (September 14) Heavy set on spreading, non-vigorous tree, fruit size medium, color dull, unattractive, flavor subacid to tart; old variety, fully evaluated, no commercial potential.

Apple Babe (September 14) Genetic dwarf tree, heavy set, fruit size below medium, fairly uniform, good color, juicy, sweet, rather bland, better suited to warmer climate.

Merton Russet (September 14-30) Heavy set, size medium to small, good red color, netted russet, strong subacid flavor; for connoisseur tastes or makers of hard cider.

Golden Mack (September 20) Moderate set, not highly productive, size variable, most medium, uneven ripening, color not outstanding, juicy and crisp but flavor on the bland side.

Opalescent (September 21) Heavy set on mature, non-vigorous tree, size medium to large, excellent red color, flavor good, subacid, sprightly; old variety, fully evaluated, no commercial potential.

Gnabasik Sdlg. (September 28) Moderate-heavy set, size medium, poor color, dull and unattractive, flavor subacid, acceptable but not outstanding, not worth introduction.

- Suntan** (September 28) Moderate set, size medium to small, color acceptable but not outstanding, firm, juicy, flavor good, subacid to tart.
- Shamrock** (September 28) Heavy set, size medium, uniform, green rather than yellow skin, flavor tart even when fully ripe.
- NY 632** (September 28) Heavy set, size large, color good, flavor subacid to sweet; check NY if to be introduced.
- Winterstein** (September 28) Moderate-heavy set, size medium to large; color and appearance similar to Gravenstein, not highly colored, flavor subacid to tart, mostly culinary uses.
- Malbon Sdlg.** (September 30) Heavy set, size above medium, uniform, very good red color, nice finish, juicy and sweet. Fully evaluated, consider if it is worth further propagation.
- Test Apple #440** (October 5) Heavy set, size above medium to large, color variable, unattractive, flavor bland subacid, not likely to be introduced, check with C & O.
- Dulcet** (October 5) Heavy set, size medium, good color, dark wine red with conspicuous pale dots; very small core, pulpy texture, flavor mediocre to poor, excessively sweet, water core in many.
- "Moore" x apple** (October 12) Very heavy set, vigorous tree, size below medium to small, color not outstanding, 60-80% red, rather dark, flavor subacid to tart, not likely to be introduced, source May Nursery.
- NY 315** (October 12) Heavy set on vigorous tree, size large, excellent yellow color, good finish, firm, juicy, flavor subacid to tart; check NY if to be introduced.
- Swaar** (October 12) Moderate set on vigorous trees, size medium, color greenish yellow, finish rough, hard crisp flesh, mild subacid flavor, fruits hang on tree well into the winter.
- Keepsake** (October 12) Heavy set, size medium, fairly uniform, not highly colored, very hard and crisp, sweet flavor, fruity aftertaste disagreeable to some; good keeper.
- Stirling** (October 19) Moderate set, tip bearing, size medium to large, red color not outstanding, rather dull, some russetting, hard crisp flesh, mild subacid, lacking flavor, keeps well.

DISEASE RESISTANT APPLE RESEARCH 1995

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This planting of disease resistant apples was begun in 1990 with cultivars and selections representing 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.

In our current trial the most promising varieties are Williams' Pride, an 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. Selections from the Geneva, NY breeding program that also look promising are NY 73334-35, NY 73334-57, NY 65707-19, and NY 75414-1 (see descriptions below). We are in contact with the research station there to see if any or all of these may be a future introduction.

The 1995 harvest produced sufficient fruit from most of the trees to conduct evaluations of fruit quality. Weather at bloom time was relatively warm, pollination was effective and fruit set well on most trees. Weather at harvest was clear and sunny, and although there were a few rainy spells in late September and October, conditions were good for late ripening varieties.

Varieties and selections are listed in harvest order within each category (1995 harvest dates noted in parentheses):

Named Cultivars:

Williams' Pride (July 28-August 3) Moderate set, size highly variable, to very large, some russeted and misshapen fruit, attractive red color, very good flavor, subacid to sweet. Best of the early season.

Novamac (August 31) Very heavy set, size small, uniform, color good but flavor rather bland; needed harder thinning for improved size and quality.

Dayton (September 7) Moderate set, size large, color good on most, red orange stripe over yellow; firm flesh, good flavor just off tree but not for long storage.

Chehalis (September 7) Moderate set, size large, good finish, attractive; flesh somewhat melting, pleasant subacid flavor, some mildew.

Liberty (October 12) Heavy set, size below medium to small, some preharvest drop, color and flavor excellent, juicy and sweet. Needed harder thinning.

Florina (October 12) Heavy set, size medium, very good color, smooth finish, very attractive, flavor mild, sweet, good keeper.

Jonafree (October 12) Heavy set, size below medium, color acceptable but less good than 1994, flesh firm and crisp, flavor very good, subacid to tart.

Macfree (October 12) Heavy set, size below medium, not highly colored, very juicy, crisp, good flavor, subacid to tart.

Enterprise (October 26) Moderate set, size medium, excellent overall wine red color, firm, crisp and juicy, very good sweet flavor with lively sparkle; continues to do well here. Very promising late keeper.

GoldRush (November 12) (tested as Coop 38, HER-4T-16) Heavy set, size medium, color good but finish unattractive compared to other yellow apples (e.g. SunCrisp), flavor very good, subacid to sweet, develops only when left late on the tree. Probably too late in most years.

Pristine Newly planted, did not fruit.

Promising Selections (may be worth introducing):

NY 75414-1 (September 22) Moderate-heavy set, size medium, uniform in size and shape, attractive dark red with heavy bloom, pale dots, polishes to shiny deep red; firm, very juicy, crisp, lively subacid flavor keeps very well.

NY 65707-19 (September 22) Moderate set, size medium to large, attractive, some russet, excellent bright red color; firm, juicy, flavor very good, lively subacid.

NY 73334-57 (October 5) Very heavy set, size medium or slightly below, uniform, excellent dark red color, flavor very good, lively subacid, very firm flesh.

Other Selections:

NY 66305-289 (September 1) Heavy set, size medium, good red color, firm, juicy, flavor subacid to tart, improves in storage.

NY 74828-12 (September 1) Moderate set, size above medium, good color, Mac type; firm, juicy, good flavor keeps well for early apple. May be susceptible to scab race 5.

PSWR-11T-48 (September 1-7) Moderate set, size very large, good color, better than in 1994, 80-100% carmine red, flavor sweet to subacid, some preharvest drop.

Coop 28 (September 14) Heavy set, size below medium, good color, similar to Gala, flavor subacid to tart, very firm and crisp.

NY 75441-67 (September 28) Heavy set, size medium and below, good wine red color, good flavor, lively subacid, declines somewhat in storage.

NY 74840-1 (September 28) Moderate-heavy set, size medium to large, good finish, attractive dark red, flavor mild subacid.

NY 75413-30 (September 28) Heavy set, rather leggy trees, size large to very large, excellent overall dark red color, flesh very firm, crisp, flavor good, mild subacid.

NY 73334-35 (October 5) Moderate-heavy set, size large, conical shape similar to Red Delicious, flavor mild subacid.

Coop 29 (October 5) Heavy set, size medium, yellow skin with pink blush in some, finish somewhat russeted, flesh firm, very good flavor, subacid to sweet.

NY 61343-1 (October 12) Heavy set, size medium to large, yellow color not outstanding, flavor good, subacid to sweet.

NY 61345-2 (October 12) Heavy set, size medium, excellent dark red color, similar to Liberty but generally larger, crisp, juicy, flavor mild subacid.

PAR-4T-215 (October 12) Heavy set, size medium, some russet, color unattractive, dark red, very hard dense flesh, crisp, flavor subacid to tart.

PAR-14T-238 (November 2) Moderate-heavy set, size medium, color not outstanding, firm, juicy, flavor subacid, not yet evaluated for storage.

Needs Further Evaluation:

HWR-19T-18 (September 14) Moderate-heavy set, size variable, most medium, good red color, flavor mild subacid. Check for earlier harvest in 1996.

CLR-20T-22 (September 14) Moderate set on young tree, size medium, fairly uniform, color bright red stripe over clear yellow (similar to Gala), very firm, crisp flesh, good flavor, subacid to sweet. Check again in 1996.

NY 66325-139 (September 28) Few fruits, small tree. Evaluate in 1996.

TNR-10T-11 (October 5) Moderate set on small young tree, medium size, attractive red color, crisp, juicy, flavor subacid. Check again in 1996.

P15R-3T-86 (October 5) Moderate set on young tree, size medium to large, color rather unattractive, dark red blush over yellow-green, very firm and crisp, subacid to tart; good storage, evaluate in 1996.

PAR-12T-101 (October 5) One tree only, moderate set, size medium to large, good red color, flavor mild subacid, evaluate for storage in 1996.

NY 66305-139 did not fruit

CMR-4T-18 did not fruit, check in 1996 for earlier harvest (August 25-30).

Provisional (final year, probable discard):

Prima (September 7) Moderate-heavy set, size large, good flavor subacid to tart at harvest, not for long storage, acceptable but far from best of the immune varieties.

HER-3T-175 (September 28) Heavy set, size medium, color not outstanding, yellow with coppery blush, firm, crisp, flavor mild subacid, on the bland side.

Discard:

Redfree (August 25-September 7) Heavy set, size medium, very good color and finish, good flavor at harvest, subacid to tart, but flavor declines rapidly in storage. Keep trees in B block.

HER-10T-108 (September 7) Moderate to heavy set, size medium and below, unusual color dappled and splotched pinkish red, unappealing, mild subacid flavor, poor, becomes mealy in storage.

CLR-20T-14 (September 7) Heavy set, size below medium, uniform, poor finish, color dull orange, unattractive; flesh crisp and very firm, flavor subacid to tart, holds up well in storage but poor quality, very mildew susceptible.

- CMR-2T-13** (September 7) Heavy set, size variable, most above medium, ripens unevenly, color unattractive; flavor good but stores poorly.
- Shay (MacShay)** (September 14-21) Moderate set, size medium, variable ripening, selective pick by color, flavor pleasant, subacid to sweet; tends to drop before fully colored, best suited to home orchards.
- PSER-11T-27** (September 14) Heavy set, size variable, most medium to large, color unattractive, yellow with pinkish blush, very russeted, flavor mild subacid, declines rapidly in storage.
- Coop 25** (September 28) Heavy set, size above medium to large, poor finish, sunburn and russetting, orange red color, unattractive; firm and juicy with excellent texture and flavor after 3 months storage. No commercial potential, probably will not be introduced.
- HFR-22T-173** (September 28) Poor tree growth, heavy set, size and shape variable, most size medium, unattractive appearance, yellow with pale pink blush over green; flavor tart, becomes soft in storage and more noticeably acid; mildew susceptible.
- CLR-12T-161** (September 28) Light set, size small, yellow skin easily blemished, flavor acceptable at harvest but not outstanding; poor storage, noticeable mildew on shoot tips.
- Nova EasyGro** (September 29) Heavy set, size medium, some sunburn, color unattractive, dull brick red, flavor acceptable but far from best, not worth further trial, disease resistance its only strong point.
- CLR-13T-45** (October 5) Moderate set, size variable, most medium, color unattractive, yellow with pinkish orange blush, poor finish, some cracking; firm texture, retains flavor well.
- CQR-10T-17** (October 5) Moderate-heavy set, size medium and above, ripens unevenly, poor finish, red stripe over yellow, very firm flesh, mediocre flavor, becoming unpleasant after long storage, severe mildew.
- PWR-37T-131** (October 5) Very heavy set, size medium, unattractive color, dark red with broken dark stripe, some russetting, flavor deteriorates, sometimes producing bitter aftertaste, mildew susceptible. Inferior to Enterprise.
- HCR-14T-125** (October 5) Heavy set, size medium-large, poor finish, patchy russet over yellow, some red-orange blush, unattractive; very hard and crisp, excellent sweet-tart flavor, very good long storage. Unattractive but excellent eating, mildew susceptible.
- HER-3T-139** (October 12) Moderate set, size above medium, good finish, color unattractive, pink blush over yellow-green, poor flavor, subacid to tart.
- HER-4T-20** (October 12) Very heavy set, size small, color unattractive, copper blush over yellow, flesh very hard, flavor subacid with faint anise tinge, stores well, mildew susceptible.
- CLR-13T-49** (October 12) Heavy set, size medium, uniform, finish poor, russets, unattractive, yellow, very hard flesh, flavor mediocre, bland subacid, off flavor develops in storage.

PEAR RESEARCH 1995
Washington State University
Mount Vernon WA 98273
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The weather pattern in 1995 began with unusually warm weather in late February, followed by a sharp freeze in the first days of March, then a return to above normal spring temperatures. At pear bloom time conditions were favorable and resulted in good fruit set on almost all the pear cultivars (varieties). From May through September it remained warm and unusually dry, and the irrigation system installed in early summer was put to good use.

Early in the season, **Harrow Delight** again showed itself as tremendously productive, with very good quality fruit. Fruits of **Bosc** were attractive and russeted. Among the red-skinned pears, **Starkrimson** (Kalle strain of red Clapp Favorite) remains the most reliably productive, with light, sweet flavor. **Sensation Red Bartlett** is less productive but offers typical aromatic Bartlett flavor. Our observations over the last 4 years indicate that **Cascade** has a definite biennial bearing habit. Though flavor and color are just as good in the "off" years, the loss of productivity is a serious drawback. Two late season pears, pollinators in the Bosc test plot, did very well in 1995. **Concorde** trees, though only in second leaf, produced a heavy crop of large fruit. However, it was not as attractive as **Conference**, which looks promising.

A summary of the different varieties and their performance follows, listed in harvest order (1995 harvest dates in parenthesis):

Established Cultivars (3 or more years fruiting):

- Harrow Delight** (August 10) Very heavy set, needs strong thinning and limb support before harvest, fruit size medium. Storage 6-8 weeks only, good flavor. One of three trees appears diseased.
- Rescue** (August 10) Heavy set, fruits large, most have strong red-orange blush, well-shaped, attractive; mild sweet flavor, 2 months' storage only. Two young trees have begun fruiting.
- Starkrimson** (August 10) Heavy set, vigorous productive tree, size above medium, very uniform, excellent color, 100% red blush, very attractive; mild sweet flavor, melting flesh, 2 months storage.
- Clapp Favorite (Bennett strain)** (August 10) Moderate set, medium size, uniform attractive shape, most lightly blushed; mild flavor, 2 months' storage.
- Clapp Favorite (standard)** see above
- Orcas** (August 24) Moderate 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.
- Sirrine** (August 24) Moderate set, fruit size medium, spreading tree with long whippy branches; most fruit lightly netted with russet. Very good, sweet flavor, excellent for drying and fresh eating, does not store beyond 3 months.
- Colette** (August 24) Small tree, runted out in shade of large apple. Moderate set, small fruit, but excellent flavor, with storage life till late December. Replace current tree with new nursery graft in 97.
- Comice** (September 5) Moderate set, fruit size medium, most had good finish, a few limb rubs. Good storage, high dessert quality, very juicy.

Spalding (September 7) Moderate set, vigorous tree, rather leggy; fruit size medium, smooth light green skin, flesh very crisp, crunchy, juicy, similar to Asian pear when ripe on tree. Good potential for backyard gardens.

Highland (September 14) Heavy set, size above medium. Good storage, firm, high quality.

Bosc (Golden Russet) (September 14) Heavy set, size large, very attractive allover russet. Very good storage, 6 months or better, firm flesh, good flavor, excellent culinary as well as dessert.

Not fully evaluated (performance not yet established or inconsistent, includes selections/seedlings):

Blancia (did not fruit) Young vigorous tree, check bloom time and pollination in 1996.

Beurre Alexandre Lucas (August 18) Heavy set, vigorous tree, fruit size above medium, blocky in shape with faint blush on some, smooth skin, little russetting. Flavor light, sweet, flesh firm. Hangs well and ripens on tree.

HW 605 (August 25) Very heavy set, fruit small, similar to parent Seckel in shape and appearance. Flavor good, pressure range of 14-15 pounds appears adequate for 3 months storage.

HW 606 (August 31) Heavy set, vigorous productive tree, fruit size medium to small; fruits ripen over extended period, late fruits have sweet, rich flavor like parent Seckel. Storage variable, needs selective harvest.

Roosevelt (August 31) Moderate set, trees vigorous and upright; size medium or slightly above, blocky and rounded, slight blush on some. Later harvest (at 10-12 pounds pressure) produced better quality fruit after storage.

Red Comice (September 5) Moderate set, fruit size medium or slightly below, typical Comice shape, red color not predominant, limited to streaks and stripes mostly on sun-exposed side. Flavor and storage same as Comice, but color less attractive.

Mericourt (September 5) Moderate set, fruit size medium, shape highly variable -green smooth skin. Storage not fully evaluated.

Cascade (September 7) Very poor set, only about 20 fruit on mature, vigorous tree, definitely biennial bearing. Color 100% red, nice finish, shape and flavor similar to Comice, good quality.

Crimson Gem Comice (September 7) Few fruits on small tree that has grown little in 7 years; low vigor often reported for this variety. Fruits medium size, typical Comice shape, flavor. Very attractive allover deep red color.

Conference (September 12) Light set, size medium to large, long pyriform shape, moderate to heavy russet over green skin. Flavorful, firm, excellent storage.

Concorde (September 22) Young trees but very productive, fruit medium-large, green skin often showing attractive copper-pink blush, some netted russet, pyriform shape. Good keeper, firm, with rich sweet flavor.

Passe Crasanne (October 26) Very vigorous trees, moderately productive, fruit size medium, blocky, oblong. Fruit remains very hard until late in season, does not fully ripen until January-February.

Passe Crasanne Rouge (October 26) Same general appearance and characteristics as **Passe Crasanne**; red color not predominant, appears as dull stripe and spots, unattractive.

New (planted 1994, not yet fruiting):

T.O. Warren
Bella de Guigno
Ubileen
Bronze Beauty Bosc

Provisional (final year - probable discard):

Sensation Red Bartlett (August 24) Moderate set, mature tree, somewhat leggy; fruit size medium, color good, flavor like Bartlett, aromatic, storage about two months.

Discard:

Red D'Anjou (October 5) Very severe scab on 80-90% of fruit. Moderate-heavy set, fruit size variable, most above medium; color 100% allover dark red. Similar to standard D'Anjou, would need 40 days plus of refrigerated storage to ripen out properly. Not well suited to area or to home orchard culture.

ASIAN PEAR RESEARCH 1995
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In 1995 the weather pattern was unusually warm in the last two weeks of February, followed by a cold spell in early March, then a return to above normal spring temperatures. The Asian pears had begun to break dormancy, but were not yet in bloom at the time of the frost, so that minimal damage resulted. Most cultivars bloomed well within the usual period and set at least a moderate crop of fruit. In the harvest period it was dry and sunny, and the irrigation system installed in early summer was used both for irrigation and for fertigation on a regular schedule.

Hamese #1 produced its usual heavy crop of fruit, but was not quite as sweet as 1994. Fruits of **Ichiban Nashi** were smaller than last year but very flavorful and of high quality. **Shinseiki** and **Chojuro** both produced good quantities of well sized, flavorful fruit to set the standards for overall performance. **Yoinashi** produced a good quantity of attractive tawny-skinned fruit with excellent flavor.

A summary of the different varieties and their performance follows (1995 harvest dates in parentheses):

Established Cultivars (3 or more years fruiting):

- | | |
|----------------------|--|
| Hamese #1 | (August 14-24) Heavy set on small tree, fruit size small to occasionally medium; attractive fine-skinned yellow fruit, easily blemished, less sweet than 1994 but still good, crisp, very juicy. |
| Shinsui | (August 29) Moderate set, fruit size variable, small on tree in E1A, medium in D. Light brown skin, attractive, flesh firm and juicy, flavor very good. |
| Ichiban Nashi | (August 24-September 9) Selective pick 8/24 for early color, main pick 9/9; moderate-heavy set, fruit size medium, flavor excellent, sweet, attractive golden-brown skin; vigorous healthy trees. |
| Shinseiki | (August 24-September 9) Selective pick 8/24 for early size and color, two more picks as later fruits matured. Moderate set, size variable, medium and below, flavor very good, sweet. Best adapted of the yellow skinned varieties currently tested. |
| Yoinashi | (September 9) Moderate set, size medium or slightly above, light brown skin, attractive, good sweet flavor, very juicy and crisp; vigorous healthy trees. |
| Chojuro | (September 14-21) Moderate-heavy set, size medium and above, many were very attractive with golden undercolor; firm crisp flesh with spicy flavor, well adapted to Puget Sound conditions. |
| Mishirasu | (September 21) Moderate set, tree leggy, sprawling, size variable, medium to very large, rough brown skin, very crisp crunchy flesh, good flavor. Tree habit undesirable, may be alternate bearing. |
| Yongi | (September 29) Moderate set, size medium and above, light brown skin, sweet, crisp flesh with pronounced spicy flavor especially with the skin on. |
| Kosui | (did not fruit) Problems with disease. Replace with new trees in 1996. |

Provisional (final year - probable discard):

UC 8-46 (September 9) Heavy set, fruit medium to large, attractive, but flavor on the bland side. Discard unless to be named by UC.

UC 17-63 (September 28) Moderate-heavy set, size above medium to large, yellow skin with heavy russet netting, unattractive, but pleasing firm texture and good flavor. Discard unless to be named by UC.

Discard:

Ya Li (September 29-October 7) Heavy set, size variable, medium and below, pyriform shape, solid light-green color, crisp white flesh. Too late most years.

PLUM RESEARCH 1995
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In 1995 the weather pattern was unusually warm in the last two weeks of February, some days registering as high as 60°F. All of the early blooming plums were starting to open and some, such as Beauty and Methley, were in full bloom at the end of February. The first days of March saw a sudden drop in temperatures and a killing frost, which eliminated most or all of the early plum bloom. Conditions for the later blooming European plums were more typical, and most of those varieties bloomed well and set adequate fruit. In the harvest period weather conditions were warm with little precipitation. Installing an irrigation system early in the season was proven worthwhile.

Of the Japanese types, Shiro produced a fair crop despite the frost, and so did Methley. Seneca is the best all-purpose European plum, good for fresh eating, drying, and canning. Stanley, a late Italian prune, produced heavily with good flavor. Some of the new plums planted in 1994 had a few fruits to sample. Notably productive was Early Laxton, a European plum from England with attractive, very sweet small fruit. We look forward to seeing more samples of these new varieties in 1996.

A summary of the different varieties and their performance follows, listed in harvest order (1995 harvest dates in parentheses):

Established Cultivars (3 or more years fruiting):

- | | |
|------------------|---|
| Methley | (July 5-15) Moderate-light set, size small, uniform, maroon skin, red flesh, cling stone, very juicy and sweet; trees were fairly productive despite early bloom killed by frost. Good for culinary use also. |
| Beauty | (July 15-20) Very little fruit, mostly in tops of tree after the frost. Fruit large, maroon skin, yellow flesh; cling stone, very juicy, good flavor, some gum pockets. |
| Shiro | (July 21) Moderate set, most in upper limbs, large size, cling stone. Standard early yellow plum, best Japanese type for local climate, large, productive, sweet and very juicy. |
| Mirabelle | (August 5-12) "NY 858" clone, heavy set, cherry size fruit, very uniform, skin yellow, 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 26-September 2) Moderate set, size large, maroon skin, yellow flesh, completely free stone; best quality European plum, some variable ripening, good for canning and drying. |
| Stanley | (September 6-12) Heavy set, some pre-harvest drop, medium size, purple skin, firm yellow-green flesh, semi-free stone; late Italian type, fruit quality was very good this year. |
| Valor | (September 6-12) Moderate-light set, large fruit, smaller on trees that had been transplanted in spring 1994. Uniform, attractive purple skin with blue bloom, firm yellow flesh, very sweet, almost completely free stone. Did not perform as well this year as in 1993 and 1994. |

Not fully evaluated (performance not yet established or inconsistent, includes selections/seedlings):

- | | |
|---------------------|---|
| Early Laxton | (July 5-12) Young tree, first fruiting, precocious, quite productive; spreading tree habit. Fruit medium to small, oval, attractive bright pinkish red blush over yellow skin. Flesh yellow, very sweet, firm, completely free stone. Looks promising in the very early season. |
|---------------------|---|

- Cocheco** (July 10-15) Young tree, first fruiting, purple foliage, upright habit, Japanese hybrid type. Moderately productive, fruits small (about 2" diameter), round to heart shaped, skin pinkish orange with red spots, fairly tough, flesh pinkish yellow, very juicy and sweet, cling stone. Cracking observed in several fruits.
- CB - 68** (July 22) Few fruit, size medium, maroon-purple skin, pinkish red flesh; cling stone, very juicy and sweet. Variable maturity.
- CB - 71** (July 26) Few fruit on young vigorous tree; check in 1996.
- Redheart** (August 16) Very few fruit, medium size, dark maroon skin with conspicuous pale dots, red flesh, juicy, good flavor, semi-free stone.
- CB-15** (September 1-7) Very light set, fruit small, Japanese hybrid type, tends to ripen unevenly. Heart shaped, dark maroon skin is astringent, reddish orange juicy flesh, melting and sweet. Check in 1996.
- Songold** (did not fruit)
- Candee** (did not fruit).

New (planted 1994, not yet fruiting):

315-42 plum
Dolly
Earliqueen
Fortune
Imperial Epineuse
Midnight Sun
Vanier
Victory

Provisional (final year - probable discard):

- 4285 Plum** (August 12) Transplanted spring 1994. Light set, small fruit very similar to "French Petite", purple skin, firm yellow flesh, free stone. Flavor sweet, check productivity in 1996.
- Schultz** (August 30) Transplanted in spring 1994. Very light set, small fruit, yellow skin blushed 50% pink, flesh sweet but mushy texture is disagreeable. Probable discard after 1996.
- Flavor Queen** **Pluot** (did not fruit)
- Flavor Supreme** **Pluot** (did not fruit)

Discard:

- Methley B-20** (July 26) Moderate set, size small, reddish-purple skin, yellow flesh. (Note: standard Methley has red flesh.) Some gum pockets, blossom ends may crack and rot, flavor inferior to standard Methley.
- AU - Crimson** (July 28 - August 5) Light set, size medium, attractive red skin color, yellow flesh, extremely variable ripening, gum pockets. Strong bitter aftertaste from skin is very disagreeable.

AR - 13

(August 10) Transplanted in spring 1994, few fruits only. Very good flavor, juicy and sweet but unproductive even before transplanting.

AU-1

(August 10) Transplanted in spring 1994, few fruits; unproductive even before transplanting.

CB - 28

(August 16) Very few fruit, size small, heart-shaped, red skin, firm flesh shading from pink to red, semi-free stone. Sweet flavor but astringent skin.

CHERRY RESEARCH 1995
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In 1995 the weather pattern at bloom time was cool and mild during most of the bloom period. From April 3-16, daily highs were in the low to mid 50s and overnight lows in the mid to upper 40s. There was no heavy rain, but trace amounts of precipitation were recorded about every other day. Conditions improved only at the very end of the bloom period (April 21-28), and highs were in the mid-60s, with no significant rain. Fruit set was good on most trees, and the exceptions were those varieties that have a record of shy bearing.

Conditions at harvest (June 16-July 14) were very good. The weather was warm and rainfall only a trace, so there was little fruit damage from cracking or rot. Again the major destruction was by birds, with harvestable fruit remaining only on those varieties that were netted. Netting of individual trees, though the only option open at present, is both labor-intensive and impractical, especially for large mature trees. An alternative we are pursuing is the grafting of cherry trees on a new dwarfing rootstock series, in particular Gisela 5 (148-2) which produces trees only about half the size of trees on standard Mazzard rootstock. We obtained some of this rootstock as well as 3 other Gisela rootstocks, and will be grafting some of our proven varieties onto them to test their potential for both home garden and commercial plantings.

Angela did well again in 1995, very productive as usual, and with fruit size somewhat larger than in most years. Still one of the best for home gardens. Viscount was excellent this year, very sweet and firm with better than usual productivity. Kristin was less productive but fruits were very high quality, and tree habit not too vigorous. Tulare looked promising, producing large, firm fruit, but needs more evaluation in a real rainy season. In the late season, Lapins had a nice crop of high quality cherries. There was little rot or cracking noted in any of the varieties.

A summary of the different varieties and their performance follows, listed in harvest order (1995 harvest dates in parenthesis):

Established Cultivars (3 or more years fruiting):

Early Burlat	(June 15-18) Moderate set and size, bird damage severe.
Moreau	(June 18-20) Moderate set, size above medium, bird damage severe.
Hardy Giant	(July 3) Moderate set, good size, very good flavor, firm texture to fruit on healthy areas of tree. However, several limbs appear diseased, leaves dropped and fruit did not set.
Angela	(July 6-9) Heavy set, size medium, larger than usual. Productive, very good flavor.
Viscount	(July 6-9) Heavy set, size large, excellent flavor. A bit on the soft side but otherwise one of the best this year.
Kristin	(July 8-10) Moderate set, size variable, most below medium, fruit flavor and color excellent. Trees not highly vigorous.
Sweet Anne	(July 8-10) Heavy set, medium size, fruit yellow with excellent bright red color, sweet flavor, productive. Upright habit means most fruit must be picked from ladders.
Bada	(July 8-10) Moderate-heavy set, better than in 1994, large fruit, good sweet flavor. Fruit yellow with bright red blush to 70%, seemed to show more limb rubs and

bruising this year. Strongly upright growth habit leaves much of the fruit high up in the tree.

- Emperor Francis** (July 8-12) Heavy set, size medium, not as sweet as Bada or Sweet Anne, but a very reliable producer. Fruit yellow with bright red blush to 90%. Major recommendation is its heavy, reliable production.
- Lapins** (July 12-16) Moderate-heavy set, size medium, dark red, attractive, very good flavor. Note: trees are self-fruitful.
- Montmorency** (July 14-18) Moderate set, only about 1/3 of 1994, medium size, typical of variety. Late ripening, very soft fruit. Standard tart cherry for culinary use.

Not Fully Evaluated (performance not yet established or inconsistent, includes selections/seedlings):

- Craig's Crimson** (June 29-July 4) Heavy set, size large, first season of good production. Very firm, good flavor, attractive blackish red.
- Cavalier** (July 3-7) Moderate set, better than in 1994, fruit size medium and above, good flavor and texture, but inferior to Viscount.
- Tulare** (July 8-10) Moderate set, size medium, very attractive dark fruit, good sweet flavor, very firm texture; needs further evaluation but still looks promising.
- Bergie** New trees to replace the ones removed in old cherry block, not yet fruiting.
- Sunburst** New trees to replace the ones removed in old cherry block, not yet fruiting.
- Hudson** New tree to replace one removed in old cherry block, not yet fruiting.
- King** New tree not yet fruiting.

Provisional (probable discard):

- Columbia** (July 4-6) Light set, fruit large to very large, attractive, and sweet like Rainier but tree unproductive. Vigorous upright trees.
- Royalton** No fruit in 1995. Tested as NY 11390. Tree established 1988, produced little or no fruit in 7 years. May lack suitable pollinizer. May be worth trial on Gisela rootstock.

Discard:

- Merla** (June 22-26) Light set, medium large size, cream yellow flesh. Fruit has fair flavor but too soft in texture. Destroyed by birds.
- NY 11375** (July 15-20) Very few fruit. Pie cherry, red, oblong in shape; sour and very late ripening. Tree is bushy and spreading, does not appear highly vigorous or productive.
- Merpet** No fruit, destroyed by birds. Low cracking and rot, but fruit too soft, unappealing.

PEACH AND NECTARINE RESEARCH 1995

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The sharp frost in early March 1995 did not appear to reduce the amount of bloom when flowers appeared. In the early bloom period (March 10-14) days were relatively warm (53-61°F) and night temperatures moderate (41-49°F), so that despite a little rain, conditions were otherwise favorable. Conditions were not so good in the mid-bloom period (March 19-24) which was both rainy and cold, with highs around 50° F and lows down to 28°F, while the late bloom (March 25-28) saw warm clear days and cold nights. Overall set after thinning did not seem to be reduced, however. Weather at harvest was good, with warm days and little precipitation. The irrigation system put in place in early summer supplied adequate water, and a regular schedule of fertigation was maintained. Warm weather continued into the later harvest season, and most varieties produced a good crop of fruit.

In the early season, **Sentry** again did well, producing good quantities of attractive, very flavorful fruit. In the mid season, **Harken** and **Harbelle** were both reliable and productive. **Newhaven** is proving to be productive, with good quality. Several of the new peach and nectarine varieties planted in 1994 had some sample fruits in 1995 that were very flavorful, and we look forward to seeing the 1996 crop.

The two early nectarine varieties, **Juneglo** and **Nectired**, were transplanted 1994 and have not fully recovered. The mid-season nectarines did not mature as well as in 1994; on average the size was smaller and some fruits seemed to lack sufficient sweetness for best quality. Skin cracking was noticeable this year.

A summary of the different varieties and their performance follows, listed in harvest order (1995 harvest dates in parentheses):

PEACHES

Established Cultivars (3 or more years fruiting):

Harrow Diamond	(July 14-20) Moderate set, size medium to small, smaller than normal as result of transplant, color not outstanding, flavor acceptable but less than best. Should improve as tree recovers.
Stark Earliglo	(July 14-20) Moderate-heavy set, size variable, most medium to large, some rot and split pits; good flavor, excellent color.
Harken	(July 28-August 4) Moderate-heavy set, size medium and above, excellent color and flavor, a few split pits. Reliable, fully evaluated.
Newhaven	(July 24-28) Moderate-heavy set, fruits medium size and above, attractive even color, good flavor, firm, sweet, nearly free stone; trees vigorous and productive.
Redhaven	(July 28-August 4) Heavy set on mature trees, size variable especially with Lovell rootstock, some areas of tree had small fruit, not well thinned. Most fruit medium size, attractive, good flavor. Ripened after Harken this year, more split pits.
Stark E. Loring	(July 31-August 5) Heavy set, size medium and above; very good color, good flavor, little rot, some split pits.
Frost	(August 2-5) Light set, size medium, low split pits, color variable, tends to uneven ripening. "Standard" for leaf curl resistance in western WA, flavor acceptable but less than best.

Mid-Pride (August 3-12) Moderate-heavy set, fruit size medium to occasionally large, good color and very good flavor, vigorous productive trees.

Vanity (September 1-7) Tree on P. tomentosa (not transplanted) moderate set, size small, color and flavor good to very good. Tree on Lovell, transplanted 1994, light set, small fruit, some failed to mature, should improve as tree recovers.

Not Fully Evaluated (performance not yet established or inconsistent, includes selections/seedlings) :

Sentry (July 13-20) Moderate-heavy set, size variable, most above medium to large, few split pits; excellent color, good flavor and texture, pleasant eating. Nice early peach, looks promising.

Proud LCR (July 18-22) Light-moderate set, young vigorous trees, size medium or slightly above, good color and flavor, some rot, few split pits. Check again in 1996.

Double Jewel (August 3) Very few fruit, small to medium size, some not filled out, flavor ok on few good specimens. Bloom is pink, showy, full double, ornamental. May not have effective pollinator.

Strahl LCR (August 3-10) Moderate-heavy set, size medium, excellent color, nearly solid garnet red, firm texture and good flavor, very little fuzz, better all around than Nerland LCR clone.

Har Beauty (August 3-10) Moderate set, fruit size medium, color and flavor good but less than 1995, good overall quality.

Delp Hale (August 12) Very light set, small fruit, flavor less than best after transplant in 1994, should improve when tree recovers.

Harcrest (August 25) Very light set, small fruit after transplant in 1994, should improve when tree recovers.

Japan Sdlg. (August 24-31) Light set on healthy, vigorous tree, fruit size below medium, white fleshed with skin blushed 10-30% pink over greenish yellow, not highly colored. Sweet good flavor, very juicy, semi cling; strongly aromatic, very fuzzy skin is disagreeable, may be too late ripening.

New (planted 1994):

Arctic Supreme

Early White Giant (Stark)

July Sun

June Pride

Kern Sun

May Sun

Rich Lady

Rich May

Snow King

Sugar Lady

Sugar May

Summer Sweet

Snowbrite

White Lady

Zee Lady

Provisional (final year - probable discard):

Harbelle	(July 20) Heavy set, size medium, relatively low cracking, flavor good, juicy, firm texture, attractive color. Needs a warm site for consistent quality.
Nerland LCR	(August 3-10) Moderate set, size medium and above, slightly larger than Tuma, split pits less than 20%; very soft melting flesh, color and flavor inferior to Strahl, skin much more fuzzy, mediocre quality.
Tuma LCR	(August 3-10) Heavy set, size medium, uniform, good color, flavor good but not best.
Early Charlotte	Did not fruit.

Discard:

Vera	(August 31) Very light set, small green fruit. Too late, unproductive.
Roaf	(September 7) Light set, size small. Fruit failed to color, did not fully ripen, too late, unproductive.
Etter	(September 7) Light set, size small. Fruit failed to color, did not fully ripen, too late, unproductive.

NECTARINES

Established Cultivars (3 or more years fruiting):

Juneglo	(July 14-20) Light set, fruits small, good color but flavor off, much cracking and rot, mummified fruits; transplanted 1994, should improve as tree recovers.
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Not Yet Evaluated (performance not yet established or inconsistent, includes selections/seedlings):

Nectired	(August 3) Light-moderate set, small fruit, color and flavor good but less than best, some cracking and rot; transplanted 1994, should improve as tree recovers.
Summer Beaut	(August 3-10) Light set, size medium, some cracking, very good color and flavor; check for productivity as tree matures.
Mericrest	(August 10-17) Light set, size medium, color dark red, flavor lacked sweetness compared to 1994, considerable cracking and rot.

New (planted 1994):

Arctic Glo
Arctic Queen
Arctic Rose
Crimson Snow (Stark)
Earliglo
Mayglo
May Kist
Royal Glo
Zee Grand

APRICOT RESEARCH 1995
Washington State University
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Apricots bloom earliest of all the stone fruit and thus are particularly sensitive to weather factors that affect pollination. In 1995 an early warm spell in mid-February brought daytime high temperatures of 58-60, and average daily temperatures registered in the mid to high 40s. All of the apricots came into full bloom earlier than usual (February 25-28). This was just the time that a cold snap set in; from February 26 to March 3, overnight lows registered from 29 to a low of 26 degrees. This severe frost killed off all the bloom on the main bearing areas of the trees. However, in some varieties the buds formed on new one-year branches had not yet reached the bloom stage. These survived the frost to bloom out about three weeks later, and these were the only varieties to set any fruit in 1995.

Conditions in the period just before harvest were good, with clear, dry weather and sufficient heat for adequate ripening, though not as hot as in 1994. Unfortunately, due to the frost at bloom time, fruit production for most varieties was poor or nil. Apriums and pluots are both early bloomers, and they had no fruit at all in 1995. Among the apricots, Puget Gold was the only one to produce fruit in any quantity. Trees of Harglow that were transplanted in 1994 were still recovering from the move and should be almost back to normal in 1996. Trees of Alfred set some fruit of good quality, but although the trees are healthy and vigorous, their overall productivity record is not high.

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, tree vigor, and tree survival were observed. A preliminary evaluation in 1993 found that 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 1994 we took yield records as well as a rating of tree vigor and survival. This year we recorded productivity by counting all fruit set before thinning. Both Lovell and Mariana 4001 were virtually identical in productivity, tree vigor, and survival. St. Julien A was much poorer both in the areas of tree survival and in overall productivity. Based on these results, St. Julien A is not considered a good rootstock for Puget Gold apricot. Citation rootstock, another popular stock for stone fruits, was not included in this trial but we would like to do a similar comparison with it sometime in the future, as we have heard favorable accounts of its performance as an apricot understock.

We initiated a new apricot seedling project in 1995, in cooperation with local home orchardists. In the spring 500 apricot seeds were germinated and then planted out in the nursery. When the seedlings are ready to transplant, they will be given out to the volunteers, who will grow the trees for 4-10 years and report back to us on any that look promising as a future variety. Since these seeds come from a program established for breeding disease resistant, good quality apricots (such as Harglow and Harcot), the chances of getting a good variety are better than with randomly chosen seeds. This year we have also collected more seeds and plan to extend this program as interest grows.

A summary of the different varieties and their performance follows, listed in harvest order (as near as could be determined in a year when set of most varieties was poor):

Established Cultivars (3 or more years fruiting):

Harglow	(July 18) Very few fruit here and there on branch ends, size medium, flavor very good. Trees recovered well from transplant.
Puget Gold	(July 20) Variable set, most had a fair set of fruit on one year branches, size medium

to large, attractive with light blush (10-20%) of red over yellow. Fruit quality and flavor were very good this year, though yields were reduced sharply by the frost at bloom time.

Not Fully Evaluated (performance not yet established or inconsistent, includes selections/seedlings):

Flavor Delight	Aprium, did not fruit.
Royal Rosa	Did not fruit.
Schilgen Sdlg.	Did not fruit. Moderately vigorous tree may be slow to begin bearing.
Katy	Did not fruit.
Rouge D'Or	Did not fruit.
Peach X apricot	Did not fruit.

New (Planted 1994, not yet fruiting):

Earli Cot	(Dave Wilson Nursery)
EarliOrange	(Stark Bro's.)
Earli Sun	(Agri Sun Nursery)
Goldbrink	(Dave Wilson Nursery)
Hungarian Rose	(Stark Bro's.)
Jordanne	(Dave Wilson Nursery)

Provisional (final year - probable discard):

Sunglo	(July 27) Very poor set, size medium, excellent color, very firm and sweet. Trees are diseased, some limbs breaking out. Possible discard, fully evaluated.
Alfred	(July 20) Poor set on vigorous healthy trees. Fruit is small, yellow, flavor excellent, sweet, rather soft. The trees seem to resist disease well but produce little fruit for their size. Possible discard, fully evaluated.

Discard:

PA 7005-2	Tree died.
Goldenglow	Genetic dwarf, in fruit garden, tree died.

APPLES
BLOOM DATES 1995

Cv.

Full Bloom

Alkmene✓	04/13/95✓
C Vagnon Flocher	04/13/95
AA 44	04/13/95
Gravenstein, Red	04/13/95
Early Dawn	04/15/95
Laxton's Superb	04/15/95
Empress (NY 651)✓	04/15/95
Discovery	04/15/95
Empire	04/15/95
Golden Mack	04/15/95
Mott Pink✓	04/17/95
Arlet✓	04/17/95
Orin✓	04/17/95
Cascade✓	04/17/95
Macfree	04/17/95
Redcort	04/17/95
NY 652	04/17/95
Earligold✓	04/17/95
NJ 107	04/17/95
NY 61345-2	04/17/95
Sunrise✓	04/17/95
Hubbardston	04/17/95
Liberty✓	04/17/95
Merton Russet	04/17/95
Jonagold, New	04/21/95
C Tremlett's Bitter	04/21/95
C Pomme Gris	04/21/95
Cox, Red	04/21/95
NY 428	04/21/95
Cox, Cherry	04/21/95
Red June	04/21/95
C Reine des Pommes	04/21/95
Redmax	04/21/95
C Marachel	04/21/95
Jomured	04/21/95
C Bulmer's Norman	04/21/95
Winterstein	04/21/95
C Bellflower	04/21/95
Golden Noble	04/21/95
C Anere de Berthcourt	04/21/95
Florina	04/21/95
Lysgolden	04/21/95
Egremont Russet	04/21/95
Acey Mac	04/21/95
Melrose	04/21/95
Karmijn de Sonnaville	04/21/95
Moore x apple	04/21/95
Honeycrisp	04/21/95
Nova EasyGro	04/21/95
Cox's Orange Pippin	04/21/95
Test Apple #440 (Hilltop)	04/21/95
Freyberg	04/21/95
Dexter	04/21/95
Gnabasik Sdlg.	04/21/95
Bramley's Seedling	04/21/95

Prima	04/21/95
NY 315	04/23/95
Jimmi (Tuell Sdlg)	04/23/95
Jonagold, Nicobel	04/23/95
Fuji, Akifu #1	04/23/95
Malbon Sdlg.	04/23/95
Sayaka	04/23/95
NJ 100	04/23/95
Princesse	04/23/95
Jonagored	04/23/95
Sunset	04/23/95
Daliter	04/23/95
NJ 90	04/23/95
C Muscat de Lense	04/23/95
NJ 112	04/23/95
C Sweet Coppin	04/23/95
Nebuta	04/23/95
C Geeveston Fanny	04/23/95
Opalescent	04/23/95
AA 18	04/23/95
Russet King	04/23/95
Biringer #101	04/23/95
Suntan	04/23/95
Tydeman's Late Orange	04/23/95
Sweet Sixteen	04/23/95
Compact Mac (Wijcik)	04/23/95
Elstar	04/23/95
Boskoop, Red	04/23/95
Gala, Fulford	04/23/95
C Muscat de Berney	04/23/95
Tsugaru, Natsuka	04/23/95
NJ 116	04/23/95
Aroma	04/23/95
Winterstein	04/23/95
Shamrock	04/23/95
Swaar	04/23/95
Jonagored 9631	04/23/95
Delbard Jubilee	04/23/95
Jonagored 9613	04/23/95
C Brown's Apple	04/23/95
X3191	04/23/95
Shizuka	04/23/95
Virginia Gold	04/23/95
Charles Ross sdlg.	04/23/95
Shay	04/23/95
Braeburn	04/25/95
Himekami	04/25/95
Elan	04/25/95
Hatsuaki	04/25/95
Senshu	04/25/95
Ginger Gold	04/25/95
Ashmead's Kernel	04/25/95
NY 674	04/25/95
Daliest	04/25/95
NY 617	04/25/95
Jonagored 9614	04/25/95
Jonagold, DeCoster	04/25/95
Apple Babe	04/25/95
Fuji, Yataka	04/25/95
C Michelin	04/25/95

NJ 99	04/25/95
NY 632	04/25/95
Cox, Queen	04/25/95
C Peau de Vache	04/25/95
Jonagold, King	04/28/95
C Dabinett	04/28/95
C Cow Jersey	04/28/95
C Bedan	04/28/95
C Feuillard	04/28/95
C Chisel Jersey	04/28/95
Golden Supreme	04/28/95
Gala, Scarlet	04/28/95
C Kingston Black	04/28/95
Michinoku	04/28/95
Rubinstar	04/28/95
C Harry Masters' Jersey	04/28/95
Stirling	05/01/95
Jonafree	02/20/93
Fuji, standard	05/01/95
Fiesta	05/01/95
Canada Grise	05/01/95
NJ 55	05/01/95
Tsugaru, Homei	05/01/95
Redfree	05/07/95
Novamac	05/07/95

DISEASE RESISTANT APPLES
BLOOM DATES 1995

Cv.

Full Bloom

Williams' Pride	04/11/95
NY 74840-1	04/14/95
PWR-37T-131	04/14/95
Dayton	04/14/95
NY 61345-2	04/17/95
Coop-25	04/17/95
Liberty	04/17/95
HFR-22T-173	04/17/95
NY 75441-67	04/17/95
NY 66305-139	04/17/95
NY 73334-57	04/17/95
NY 75414-1	04/17/95
HCR-14T-125	04/17/95
PAR-14T-238	04/17/95
NY 74828-12	04/20/95
Prima	04/22/95
NY 75413-30	04/22/95
HER-10T-108	04/22/95
NY 65707-19	04/22/95
PSER-11T-27	04/22/95
NY 66325-139	04/22/95
CQR-10T-17	04/22/95
HER-4T-20	04/22/95
NY 61343-1	04/22/95
NY 66305-289	04/22/95
CLR-12T-161	04/22/95
NY 73334-35	04/22/95
Coop 28	04/22/95
Gold Rush	04/27/95
HWR-19T-18	04/27/95
Coop 29	04/27/95
CMR-2T-13	04/27/95
CLR-13T-45	04/27/95
Enterprise	04/27/95
Chehalis	04/27/95
PAR-12T-101	05/01/95
PAR-4T-215	05/01/95
PSWR-11T-48	05/01/95
Redfree	05/07/95
HER-3T-175	05/07/95
TNR-10T-11	05/07/95
CLR-13T-49	05/07/95
Novamac	05/07/95
Jonafree	05/10/95
CLR-20T-14	05/10/95
HER-3T-139	05/10/95
Shay (MacShay)	05/10/95

PEACHES/NECTARINES
BLOOM DATES 1995

	Cv.	Full Bloom
S	Mid-Pride	03/10/95
NS	Har Beauty	03/14/95
NS	Sentry	03/14/95
S	Harcres	03/14/95
S	Harrow Diamond	03/14/95
S	Stk. Early Loring	03/17/95
NS	Cole LCR	03/17/95
S	Juneglo	03/17/95
NS	Harken	03/17/95
S	Stk. Sensation dwf.	03/17/95
NS	Frost	03/17/95
NS	Newhaven	03/17/95
S	Necta Zee dwf.	03/19/95
NS	Stk. Earliglo	03/19/95
S	Pix Zee dwf	03/19/95
S	Nectired	03/21/95
S	Mericrest	03/21/95
NS	Redhaven	03/24/95
S	Nerland LCR	03/24/95
NS	Etter	03/24/95
NS	Newhaven	03/24/95
S	Strohl LCR	03/24/95
NS	Summer Beaut	03/24/95
NS	Vera	03/24/95
S	Vanity	03/28/95
NS	Roaf	03/28/95
S	Tuma	03/28/95
S	China sdlg.	03/28/95
NS	Proud LCR	03/28/95
S-D	Double Jewel	03/28/95
NS	Harbelle	03/28/95

APRICOTS
BLOOM DATES 1995

Cv.	Full Bloom
Rouge D'Or (Norton)	02/20/95
Royal Rosa	02/20/95
Alfred	02/23/95
Puget Gold	02/23/95
Harglow	02/26/95
Katy	02/26/95
Flavor Delight aprium	02/26/95
Schilgen sdlg.	02/28/95
Sunglo	03/02/95

NOTE: Unusually warm temperatures the last 2 weeks of February brought on early bloom, followed by a sharp frost in the first days of March that destroyed the early bloom. "Rat-tail" bloom in late March appeared on one year branch tips, and set some fruit successfully.

Observations: March 28, 1995
Puget Gold - late bloom full on branch tips, no early set
Alfred - late bloom full on branch tips, no early set
Harglow - late bloom just emerging, no early set
Rouge D'Or - no late bloom, early bloom appears destroyed
Schilgen sdlg. - late bloom just emerging, no early set
Sungold - late bloom full on branch tips, some set fruit
Peach x cot - no bloom, no set

PLUMS
BLOOM DATES 1995
Full Bloom

Cv.

Beauty	02/22/95
Methley, Standard	02/22/95
Methley, B-20	02/26/95
Flavor Queen Pluot	02/28/95
AU-Crimson	03/07/95
Shiro	03/10/95
Flavor Supreme Pluot	03/10/95
Redheart	03/13/95
AR-13	03/13/95
AU-1	03/18/95
Sungold	03/18/95
Au-Roadside	03/22/95
CB-28	03/22/95
CB-68	03/22/95
Mirabelle	03/28/95
CB-71	03/28/95
Stanley	03/28/95
Valor	03/28/95
CB-15	03/28/95
Schultz	03/30/95
Plum 4285	03/30/95
Seneca	04/03/95
Candee	04/10/95

NOTE: Unusually warm temperatures the last 2 weeks of February brought early bloom, followed by a sharp frost in the first days of March. Early blooming plums like Methley and Beauty were subject to the frost.

ASIAN PEARS (NASHI)
BLOOM DATES 1995
Full Bloom

Cv.

UC 8-46	03/22/95
Ya Li	03/28/95
Yongi	03/28/95
Chojuro	03/28/95
Yoinashi	03/28/95
UC 17-63	03/28/95
Shinseiki	03/28/95
Shinsui	03/28/95
Mishirasu	03/31/95
Hamese #1	03/31/95
Ichiban Nashi	04/01/95
Kosui	04/03/95

CHERRIES
BLOOM DATES 1995
Full Bloom

Cv.

Moreau	04/03/95
Early Burlat	04/03/95
Lapins	04/06/95
King	04/10/95
Sweet Anne	04/10/95
Viscount	04/10/95
Royalton	04/10/95
Hardy Giant	04/13/95
Kristin	04/13/95
Craig's Crimson	04/17/95
Bada	04/17/95
Tulare	04/17/95
Cavalier	04/17/95
Angela	04/17/95
Montmorency	04/17/95
Merpet	04/17/95
Emperor Francis (BSRK)	04/17/95
Merla	04/21/95
Compact Lambert (LFG)	04/21/95
Columbia	04/28/95
NY 11375	04/28/95

Cv.

PEARS
BLOOM DATES 1995
Full Bloom

Spaulding	03/26/95	with Asian pears
Harrow Diamond	04/03/95	
Blancia	04/03/95	
Beurre Alexandre Lucas	04/10/95	
Rescue	04/12/95	
Starkrimson	04/12/95	
Sensation Red Bartlett	04/12/95	
Highland	04/12/95	
Passe Crasanne	04/14/95	
Conference	04/14/95	
Concord	04/14/95	
HW 606	04/14/95	
HW 605	04/14/95	
Passe Crasanne Rouge	04/14/95	
Cascade	04/14/95	
Colette	04/17/95	
Roosevelt	04/17/95	
Orcas	04/17/95	
Sirrine	04/17/95	
Clapp Favorite (Bennett)	04/17/95	
Mericourt	04/17/95	
Bosc	04/19/95	
Crimson Gem Comice	04/19/95	
Red D'Anjou	04/19/95	
Comice	04/19/95	

CRABAPPLE POLLINATOR TRIAL

G.A. Moulton, J. King, and B. Gundersen

In 1994 and 1995, a pollination trial was conducted at the WSU - Mount Vernon research station. The purpose of this trial was to test the suitability of certain crabapple varieties of proven disease resistance for use in commercial apple orchards as pollinizer trees. In 1994 the test included 11 potential crab pollinizers with bloom periods that corresponded with the bloom stage of 6 apple varieties. The latter varieties were those that are commercially grown in area orchards (e.g. Jonagold), or have potential as commercial varieties. In 1995 the trial was repeated with 10 crab pollenizers, some of the 1994 varieties omitted and others added, on the same 6 commercial varieties.

Methods:

Pollen was gathered from the crabapple blossoms at balloon stage, before any possible entry of pollen from outside sources, when buds were sufficiently developed for pollen to be fully ripe. Approximately 200 buds from each crabapple variety were collected, the anthers were removed, then dried in petri dishes for 24 hours to allow them to dehisce. The petri dishes were then kept refrigerated to preserve pollen viability. In the field, individual flowers of the chosen cultivar to be pollinated were emasculated, and the prepared crabapple pollen applied with the fingertip or with a clean pencil eraser, sterilizing with alcohol between each variety. Timing of the pollination was when 40% to 50% of the flowers on the tree to be pollinated were at balloon stage, during the main bloom period (April 15-28, 1994 and April 11-27, 1995). The area of each tree or limb on which the pollination test was performed was marked off with colored tape and labeled. After the June drop when fruit set could be determined, a count was taken of the percentage of pollinated blooms that had set fruit.

Results:

Results for 1994 appear in Table 1, and for 1995 in Table 2, below. Table 3 presents a comparison of the results for the different crabapple pollinators in 1994 and 1995.

Table 1. Effectiveness of Certain Crabapples as Orchard Pollinators -1994

Cv.	Pollinator	Date	# Flrs	Fruit Set	%
Alkmene	Sugar Tyme	04/15	20	0	0
	M. baccata v. jackii	04/15	20	0	0
	M. x zumi calocarpa	04/15	20	0	0
	Bob White	04/15	20	0	0

Jonagold, Std.	Evereste	04/19	20	4	20
	Snowdrift	04/19	20	5	25
	White Angel	04/19	20	7	35
	Donald Wyman	04/19	20	8	40
Scarlet Gala	Christmas Holly	04/25	20	2	10
	Evereste	04/25	20	2	10
	Winter Gem	04/25	20	2	10
	David	04/25	20	0	0
Fuji, Std.	Christmas Holly	04/25	20	3	15
	Evereste	04/25	20	2	10
	Winter Gem	04/25	20	2	10
	David	04/25	20	1?	5?
Fiesta	Christmas Holly	04/25	20	13	65
	Evereste	04/25	20	9	45
	Winter Gem	04/25	20	4	20
Braeburn	Christmas Holly	04/28	6	0	0

Braeburn, cont.	Evereste	04/28	6	0	0
	Winter Gem	04/28	6	0	0

Table 2. Effectiveness of Certain Crabapples as Orchard Pollinators - 1995

Cultivar	Pollinator/Date collected	Date	# Flowers	Fruit Set	%
Alkmene	Sugar Tyme 4/11	4/11, 4/13	30/30	0/0	0/0
	Evereste 4/11	4/11, 4/13	30/30	0/0	0/0
	M. x zumi calocarpa 4/11	4/11, 4/13	30/30	0/0	0/0
	Sentinel 4/11	4/11, 4/13	25/30	0/0	0/0
Jonagold, Std.	Evereste 4/11	4/13: A/B	30/31	11/0	37/0
	Snowdrift 4/13	4/17	30	7	23
	White Angel 4/13	4/17	24	2	8
	Winter Gem 4/13	4/17	30	1	3
Scarlet Gala	Evereste 4/11	4/24	26	3	12
	White Angel 4/13	4/24	30	4	13
	Christmas Holly 4/17	4/24	30	10	33
	Snowdrift 4/13	4/24	30	0	0
Fuji, Std.	Evereste 4/11	4/25	30	2	7
	White Angel 4/13	4/25	30	8	26
	Christmas Holly 4/17	4/25	30	2	7
	Snowdrift 4/13	4/25	30	12	40
Fiesta	Evereste 4/11	4/25	30	4	13
	Christmas Holly 4/17	4/25	30	10	33
	White Angel 4/13	4/25	30	11	36
	Snowdrift 4/13	4/25	30	12	40

Braeburn	Winter Gem 4/13	4/21	27	0	0
	Christmas Holly 4/17	4/21	30	0	0
	Evereste 4/11	4/21	31	1	3
	Snowdrift 4/13	4/21	30	0	0

Table 3. Comparison of Results In 1994 and 1995

Cultivar	Pollinator	1994 - % fruit set	1995 - % fruit set
Alkmene	Sugar Tyme	0	0
	Evereste		0
	M x zumi calocarpa	0	0
	Sentinel		0
	M. baccata v. jackii	0	
	Bob White	0	
Jonagold, Std.	Evereste	20	37
	Snowdrift	25	23
	White Angel	35	13
	Donald Wyman	40	
	Winter Gem		3
Scarlet Gala	Christmas Holly	10	33
	Evereste	10	12
	Winter Gem	10	
	David	0	
	White Angel		13
	Snowdrift		0
Fuji, Std.	Christmas Holly	15	7
	Evereste	10	7
	Winter Gem	10	

	David	5?	
	White Angel		26
	Snowdrift		40
Fiesta	Christmas Holly	65	33
	Evereste	45	13
	Winter Gem	20	
	White Angel		36
	Snowdrift		40
Braeburn	Christmas Holly	0	0
	Evereste	0	3
	Winter Gem	0	0
	Snowdrift		0

Discussion:

It was clear that in some instances (Alkmene, Braeburn) there was no fruit set with any pollinator. In 1994 there was an overall lack of available flowers on Braeburn, so the result could be termed inconclusive. In 1995 there were plenty of blooming spurs, but the results were not significantly better. In the case of Alkmene, in 1994 we conjectured that pollen collected from the early blooming crabapples had not been properly handled between pollen collection and pollination, and had lost its viability. This seemed less likely after seeing the 1995 results, because in 1995 the same pollen used unsuccessfully on Alkmene and Braeburn did succeed to some degree in pollinating other cultivars. A possible explanation is that the flower structure of different apple cultivars, while basically similar, is not identical. Possibly the method of emasculation may have damaged the remaining structure on Alkmene and Braeburn in a way that did not occur with the others. In that case, even if the flowers were pollinated, the fruits would not set successfully.

Comparison of the success rate of the various pollinator crabapples does not give a clear picture of any one consistently superior (see Table 4). The early-blooming crabapples that were tried unsuccessfully with Alkmene were not tried on later blooming apples because in actual orchard conditions their bloom would be too early to catch the best times for pollination. The exception is Evereste in 1995; Evereste has a long bloom period and very abundant bloom, so that in 1995 the earliest flowers of Evereste made it a practical pollinator for Alkmene (with respect to bloom time, that is) as well as for later blooming apples.

The relationship between the percent of pollination in the trial compared with what would

occur in field conditions is unknown. What is evident is that in most instances the newer crabapple varieties included in this trial produced results comparable to that of Snowdrift, a crabapple in standard use as an orchard pollinator. Poor response of David as a pollinator might have been due to immature buds, so that not enough ripe pollen was available to distribute.

It is the tree habit and especially the degree of disease resistance of these newer crabapples that would make them useful additions to the currently available orchard pollinator varieties. 'EveresteTM' is scab immune, and both 'Winter GemTM' and 'Christmas HollyTM' are highly rated for scab resistance (5.0 and 4.8, respectively, where 5 is the top rating) in a trial of more than 50 disease resistant crabapples conducted since 1984 at WSU-Mount Vernon. Scab ratings of the other crabapples in the trial are as follows: 'White Angel' 4.5 (very good resistance), 'Sentinel' 4.4, *M. baccata* v. *jackii* 4.3, 'Sugar Tyme' 4.1, 'David' 4.1, 'Bob White' 4.0, *M. x zumi* 'calocarpa' 3.9 (all classed as moderate resistance), 'Snowdrift' 3.4, and 'Donald Wyman' 3.2 (both moderately susceptible).

Table 4. Comparison of Results in 1994 and 1995, by Pollinator

Pollinator crab	Cv. Pollinated	1994	1995
M. baccata v. jackii	Alkmene	0	
Bob White	Alkmene	0	
Christmas Holly	Scarlet Gala	10	33
	Fuji, Std.	15	7
	Fiesta	65	33
	Braeburn	0	0
David	Scarlet Gala	0	
	Fuji, Std.	5?	
Donald Wyman	Jonagold, Std.	40	
Evereste	Alkmene		0
	Jonagold, Std.	20	37
	Scarlet Gala	10	12
	Fuji, Std.	10	7
	Fiesta	45	13
	Braeburn	0	3
Sentinel	Alkmene		0
Sugar Tyme	Alkmene	0	0
Snowdrift	Jonagold, Std.	25	23
	Scarlet Gala		0
	Fuji, Std.		40
	Fiesta		40
	Braeburn		0
White Angel	Jonagold, Std.	35	13
	Scarlet Gala		13
	Fuji, Std.		26

	Fiesta		36
Winter Gem	Jonagold, Std.		3
	Scarlet Gala	10	
	Fuji, Std.	10	
	Fiesta	20	
	Braeburn	0	0
M. x zumi calocarpa	Alkmene	0	0

Project No.: 13K-3455-4663

Title: Jonagold Test Block and Culture Studies

Personnel: Gary Moulton, Scientific Assistant, WSU Mount Vernon
Jacqueline King, Technical Farm Laborer, WSU MV
Babette Gundersen, Technical Farm Laborer, WSU MV

Reporting Period: 1995

Accomplishments:

Two experiments were conducted in the Jonagold plot in 1995. A fertigation trial with 2 treatments plus control was initiated. The treatments were 1.) twice weekly supplement of K alone, 2.) twice weekly supplements of K plus Mg, and 3.) control - water only. Data for this experiment was not taken in 1995, since the trees were young and didn't bear enough fruit. In 1996 and following years, data collected will include fruit, leaf, and soil analysis of the different treatments.

A fertility trial as above was also conducted off station, on a grower's established Jonagold block. Data taken included monthly analysis of soil, fruit, and leaf samples. Weekly fruit tests of starch, pressure, and soluble solids were made from mid-August through harvest. Fruit samples at harvest were also evaluated for fruit finish, including russetting and lenticel rupture.

The second experiment performed at the on-station block was a spray program for control of scab and mildew, including different fungicides at varied rates of application. It included four treatments replicated three times. Trees were rated for observed scab and mildew.

Results:

Initial results showed no difference between the treatments. However, soils were already high in potassium, and the unusually heavy August rains also released high levels of nitrogen, so it is anticipated that it might take a few years to see results. The fertility trials on station will continue for several seasons, with interim results in 1996. Results of the apple scab and powdery mildew trial showed no significant difference between treatments. Increased powdery mildew infection was noted for the lowest fungicide concentration.

Publications:

None as yet on the fertigation trial on station. Reports of the spray trial and of the off-station fertigation trial are in preparation.

NORTHWEST AGRICULTURAL RESEARCH FOUNDATION
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Commercial Production Methods for Bosc Pear - 1995
Project No.: 13K 3455 5664

SECOND QUARTER:

This trial was initiated in March/April 1994, when the plot was established, and the first trees planted. During the 1994 season, the trellis systems were installed, a system of drip irrigation was put in, and grass alleyways planted between rows. Basic pruning was done over the winter 1994-95 to initiate the different training systems (V-trellis, single trellis, and free standing). Pollinizer trees of the varieties Conference, Concorde, Starkrimson, and Comice were included. Bosc trees on Old Home X Farmingdale 217 and on Provence Quince are well established. Field-ready trees of Bosc on Quince A and on Quince C were not available in 1994, and their introduction into the plot was delayed due to the need to graft an interstem (in this instance, Comice) since Bosc is not compatible if grafted directly onto Quince A or C. Development of these double-grafted trees will be somewhat behind the other established trees. In general the plot is in good shape and trees are growing well.