

Cherries in Alaska

Ilona Farr 2018



Sweet Cherries

- Sam- on Giesela Trying Rainier in Dome
- Clark-died
- Kordia-poor
- Emperor Frances- poor
- Kristin- poor
- Kansas Sweet-died
- Craig's Crimson- died
- All from Rainier nursery

Pollination

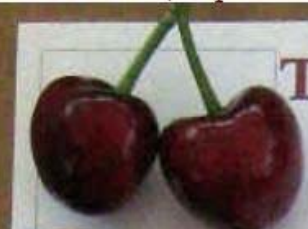
- Most sweet cherry varieties are self-unfruitful (self-incompatible, SI) and require cross pollination with another variety as the pollen source.
- Some varieties, e.g. Bing, Lambert, Royal Ann/Napoleon, are also cross-unfruitful and cannot be depended upon to provide pollen for each other. Index, Lapins, Skeena, Sweetheart, White Gold, Sonata, Stella, Symphony, Sunburst, and Black Gold are self-fruitful (SF) and can serve as “universal” pollen sources for many self-unfruitful varieties with the same bloom time. However, Stella has been found to not work as a pollinator for Bing in some areas.

Bloom Time

- Their use as “universal” pollinators should also take bloom timing into consideration as follows. Early-bloom: SI – Somerset; SF – Lapins and Skeena. Early- to early-mid-bloom: SI – Kristin, Chelan, and Black Republican; SF – Sweetheart and WhiteGold. Mid- to late-mid-bloom: SI – Royalton, Summit, Ranier, Royal Ann / Napoleon, Bing, Burlat, Van, Regina, Lambert, Sam, and Windsor; SF – Sonata, Stella, Symphony, and Sunburst. Late-bloom: SI – Gold and Hudson; SF – BlackGold. Move bees into orchards on the first day of bloom. The pollination table below is a partial guide to help select pollen source parents.

Pollinators

- Fruiting variety Compatible Pollinizers
- Bing: Sam, Van, Montmorency*, Rainier, Stella, Compact Stella, Garden Bing
- Lambert; Sam, Van, Montmorency, Rainier, Stella, Compact Stella, Garden Bing
- Rainier: Sam, Van, Bing, Royal Ann, Lambert, Montmorency, Stella, Compact Stella, Garden Bing
- Royal Ann: Sam, Van, Montmorency, Rainier, Stella, Compact Stella, Garden Bing
- Stella, Compact Stella, Garden Bing: Self-fruitful
- Van: Sam, Bing, Royal Ann, Lambert, Montmorency, Rainier, Stella, Compact Stella, Garden Bing
- Montmorency (*tart cherry) Self-fruitful



Tieton



Brooks



Bing



Sandra Rose



Tartarian



Quarter Coin



Van



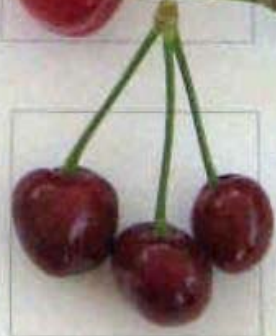
Lapin



Rainier



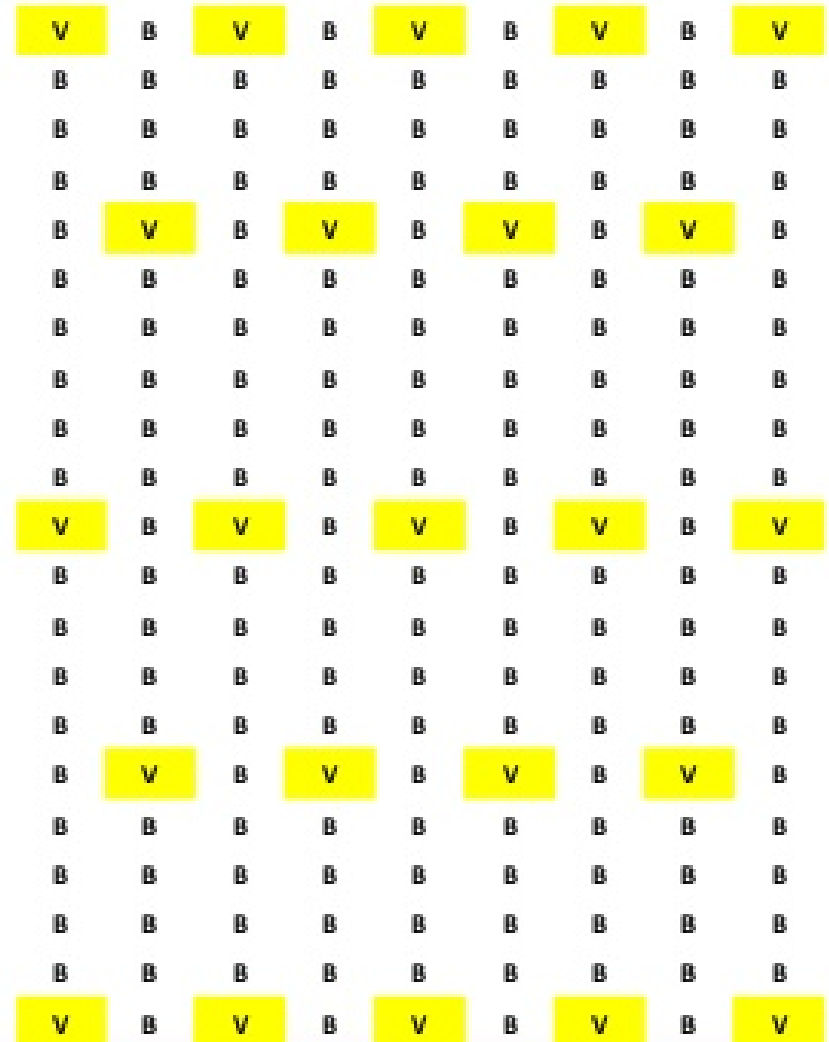
**Utah
Giant**



**Andy
Gee's
Son**

Pollinizer placement

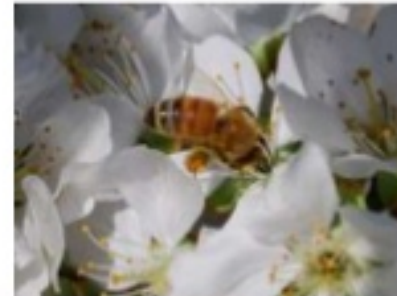
- Pollinizer Placement
 - Every 10th tree in every row; diamond pattern
 - More trees between pollinizers down the row (5), but similar distance with tighter planting
 - Trees should be within 100 feet of a pollinizer
 - Pollinizer trees should be distinct and/or marked



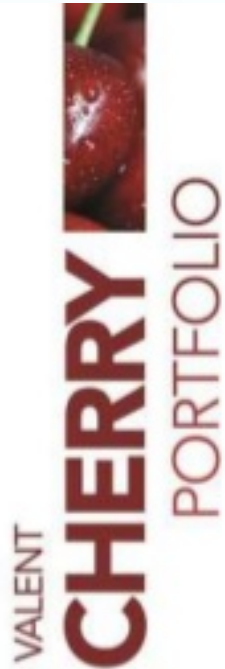
Bees



- Pollinators
 - Cherries require insect pollination
 - Feral bees, bumblebees, mason bees, other insects generally inadequate
 - Insufficient numbers in early spring when cherries bloom
 - Managed colonies of Honeybees
 - Most important pollinator of cherries
 - Can be placed how, when, and where needed



Honeybees Best



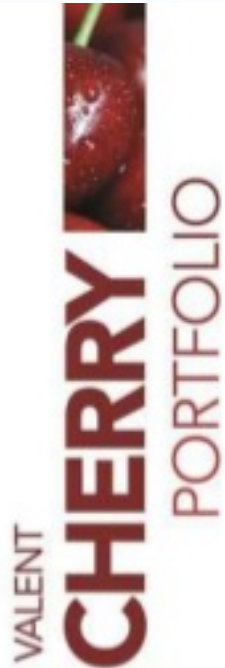
- Honeybee Pollination Management
 - Timing
 - Not too early
 - Bees will go to other flowers for nectar, and stay with them
 - Not too late
 - Flowers only receptive to pollen ~ 12 – 48 hours
 - Unless treated with *ReTain*
 - Weather and variety dependent
 - Flowers are most receptive to pollination just as they open
 - ~5% Bloom



Attractants

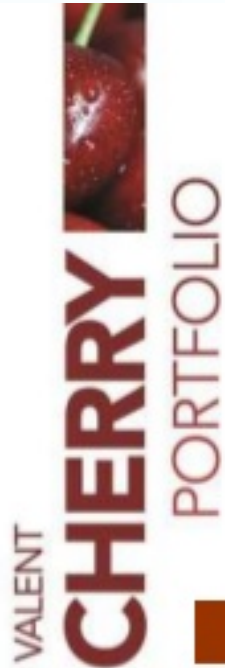
- Bee Attractants
 - Nectar
 - Cherry flowers have very small amounts of nectar, < 1 μ l / flower
 - Sweet cherry nectar has high sugar concentration
 - BeeScent™
 - Pheromone that stimulates bee foraging behavior
 - Vericet
 - Blend of “plant constituents, metabolic accelerators, balanced minerals, and other factors”
 - Enhances pollen tube growth and stimulates bee activity (?)
 - Sugar
 - Boron
 - Witches Brews

Pollinizer Selection



- Pollinizer Selection
 - Purpose
 - Pollinate main variety or generate additional income?
 - Answer can influence rootstock and training system
 - Bloom Timing
 - Overlap with main variety?
 - Cherry flowers that have not been treated with ReTain® are normally receptive to pollen for only 12 – 48 hours after opening.
 - Pollen Compatibility
 - 22 different compatibility groups, plus universal donor group

Cherry Pollination



- Sweet Cherries Can Be:
 - Self-Sterile
 - Require cross-pollination from another compatible variety
 - Intra-Sterile
 - Have the same s-alleles as each other
 - Self Fertile
 - Are also universal pollen donors

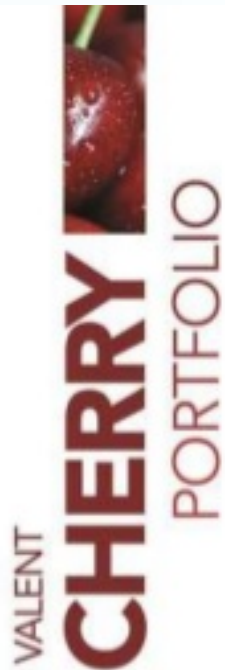
Self-Sterile (Require Cross-Pollination)

Bing, Brooks, Tulare, Van, Early Robin, Regina, Cristalina, Coral Champagne, Attika, Rainier, Royal Rainier, Garnet, Chelan, Tieton

Self-Fertile (Also Universal Pollen Donors)

Lapins, Sweetheart, Index, Benton, Santina, Selah, Skeena, Sonata, Staccato

Compatibility



- Pollinizer Compatibility

Allele Group	Varieties
Group 1 (S_1, S_2)	Tulare, Summit
Group 2 (S_1, S_3)	Van, Early Robin, Regina, Cristalina
Group 3 (S_3, S_4)	Bing, Lambert, Royal Anne
Group 6 (S_3, S_6)	Attika (Kordia)
Group 9 (S_1, S_4)	Black Republican, Rainier, Royal Rainier, Garnet, Chinook
Group 16 (S_3, S_9)	Chelan, Tieton, Burlat
Group 18 (S_1, S_9)	Brooks
Group O (with S_4') (Universal Donors)	Lapins, Sweetheart, Index, Benton, Santina, Skeena, Stella, Selah, Sonata, Staccato

Cherry fruit trials

Fruit quality characteristics

Sweet cherry cultivars in a variety trial at The Dalles, Oregon.

Cultivar	Picking time + or - Bing (days)	Average first bloom + or - Bing/Rainier (days)	Self-fertile?	Average fruit size (mm)	Average row size	Average pedicel-fruit retention force (g)*	Average fruit firmness (g/mm)**
Santina	-7 B	+3 B	Yes	29.6	9.5	1216	320
Kiona	-8 B	+8 B	Yes	28.9	9.5	1286	244
Benton	-1 B	+7 B	Yes	30.7	9	1058	303
Cowiche	+8 B	+8 B	No	32.8	8.5	1542	326
Selah	+9 B	+8 B	Yes	30.3	9	556	359
Regina	+11 B	+12 B	No	30.3	9	1360	285
Early Robin	-11 R	-2 B	No	29.5	9.5	1162	322

B = Bing

R = Rainier

* Minimum 700 g is desired

** Minimum 250 g/mm is desired

SOURCE: Lynn Long, Oregon State University

Montmorency My Favorite



Pie Cherries

- Montmorency pie-- my favorite
- Ripens early!! Self fertile, sweeter, moose do not bother much. darker cherry so pies rich red color, nice for juice but generally single fruit not big clusters-- unfortunately favorite of birds! Medium size must pick stems to keep up fruit yield.
- Evans/Bali on own root stock nice big cherry ripens later-- sweet when allowed to ripen-- varies in size from tree to tree took 8 years to grow and produce!
- Pozog Early small dark color beautiful tree singles stem does not come off!

More Pie Cherries

- Baird small pie cherry on own rootstock good for juice and eating but ripens late.
- Northstar not rec all 10 trees have died good tasting dark pie cherry
- Meteor one of my favorites big cherries clusters of fruit flowers same time as Montmorency but ripens 2-3 weeks later-- lighter color than Montmorency must pick stems to increase fruit yield
- Mesabi late ripening pie cherry moderate size lighter color
- Surefire new variety on giesela seems hardy good tasting according to 2yo nephew who ate only cherries!

















Comparison of tree characteristics. Note: Montmorency cannot be grown in SK, so comparisons are based on literature and observations in Ontario and BC.

	over-the-row harvesting	tree height	Vigour	Suckering	Harvest time
Evans	no	> 4m	extreme	many	Late Aug
Montmorency	no	> 4m	extreme	?????	n/a
SK Carmine Jewel	yes	2 to 2.5m	moderate	slight	late July/early Aug
Romeo (7-7-5.8)	yes	2 to 2.5m	moderate	moderate	late Aug/early Sept
Valentine (7-19-27.6)	yes	2 to 2.5m	very	moderate	early to mid Aug
Crimson Passion (7-21-16.3)	yes	2m	slight	rare	early to mid Aug
Juliette (7-21-31.0)	yes	2 to 2.5m	moderate	moderate	early to mid Aug
Cupid (7-32-19.1)	yes	2 to 2.5m	slight	slight	late Aug/early Sept

Table 2. Comparison of fruiting characteristics. Note: numerical data mainly based on 2002 season and may change from year to year.

	Skin Colour	flesh colour	Juice Colour	Pit Shape	Fruit wt.	Pit wt.	Brix
Evans	Bright red	yellow/pink	brown/pink	elongated	5.0g	0.22g	13
Montmorency	Bright red	yellow/pink	brown/pink	round	4.5g	0.25g	12
SK Carmine Jewel	Black/dk red	red	bright red	round	3.5g	0.15g	17
Romeo (7-7-5.8)	Black/dk red	red	bright red	round	4.0g	0.20g	22
Valentine (7-19-27.6)	Med red	light red	light red	round	4.5g	0.25g	15
Crimson Passion (7-21-16.3)	Black/dk red	red	bright red	round	6.0g	0.28g	22
Juliette (7-21-31.0)	Black/dk red	red	bright red	round	5.0g	0.25g	20
Cupid (7-32-19.1)	Black/dk red	red	bright red	elongated	6.5g	0.35g	19

	Early Burlat	Lapins	Angela	Stella	Bada	Hedelfingen	Compact Lambert	Montmorency	English Morello	North Star
Early Burlat										
Lapins										
Angela										
Stella										
Bada										
Hedelfingen										
Compact Lambert										
Montmorency										
English Morello										
North Star										

VARIETY	IMAGE	SEASON	SIZE/SHAPE	SKIN	FLESH	FLAVOUR	BACKGROUND
Bing		mid	med- large, round - heart	dark red	firm, ruby	sweet, crisp, juicy	great fresh & cooked, this variety originated in Oregon in 1875. At its best late in season. Semi-freestone so easy to pit
Burgsdorf		early	small	red	firm	mild	developed at Harcourt in VIC, first commercial variety of the season
Burlat		early	med- large, kidney shape	red	red	subtly sweet	originated in Morocco in 1936
Empress		early	medium, round	dark red- mahogany	red- dark red	subtly sweet	originated in Young these are at their best when deep mahogany in colour
Kordia		late	med- large heart	mid- dark burgundy	firm, red	juicy, sweet	originally from Czechoslovakia, this variety is great eaten fresh
Lambert		late	medium- large, heart	dark red	firm, dark red flesh	sweet and mild	another imported variety, this is from Oregon in the US
Lapin		late	large, round- heart	bright, dark mahogany	firm, red	good, juicy flavour	cross between Van & Stella, this variety originated in Canada. Colours early, taste to test maturity
Merchant		early	large, rounded heart	bright, mid- dark red	soft, red	good balance of acid and sweet	originally from the United Kingdom
Morello		late	sml- med	dark red	dark red	tart and sour	a classic sour variety, these are too sour for many to eat fresh, however are perfect for cooking (pork sauce), jams, preserves, pies etc
Ranier		mid	large, heart	yellow with pink- red blush	white, moderately firm with clear juice	excellent flavour, sweet with a hint of honey	introduced in Washington state in the 60s, this is a cross between Bing and Van. High sugar content
Rons Seedling		mid	med- large, round - heart	thick, dark red - purple/black	very firm, fleshy red	juicy, strong sweet	this is one of the most popular & versatile varieties, great fresh & cooked, originated in Young in 1928
Simone		late	large, round - heart	dark red- mahogany	firm, red, juicy	sweet	similar to lapins, this is a recent Canadian variety
Stella		mid - late	med- large, heart	red-black	dark red - black	sweet, firm and coarse	this Canadian variety matures just in time to be one of the leading contenders for the Xmas season
Supreme		early	large, heart similar to Ron's Seedling	red black	dark red, med to firm texture	excellent, rich and sweet	easy to pit and is great for jam. Selected by Mr C Sackett of Young
Sweetheart		late	med - large, heart	bright red	red	mild, sweet	a van cross, this variety originated in Canada and is gaining acceptance in Australia
Van		mid	med, squashed heart	glossy, black	red, firm & juicy with slight crunch	strong flavour, sweet to tart, high sugar content.	originated in Canada in 1944, this variety offers excellent quality and freezes well but is losing popularity



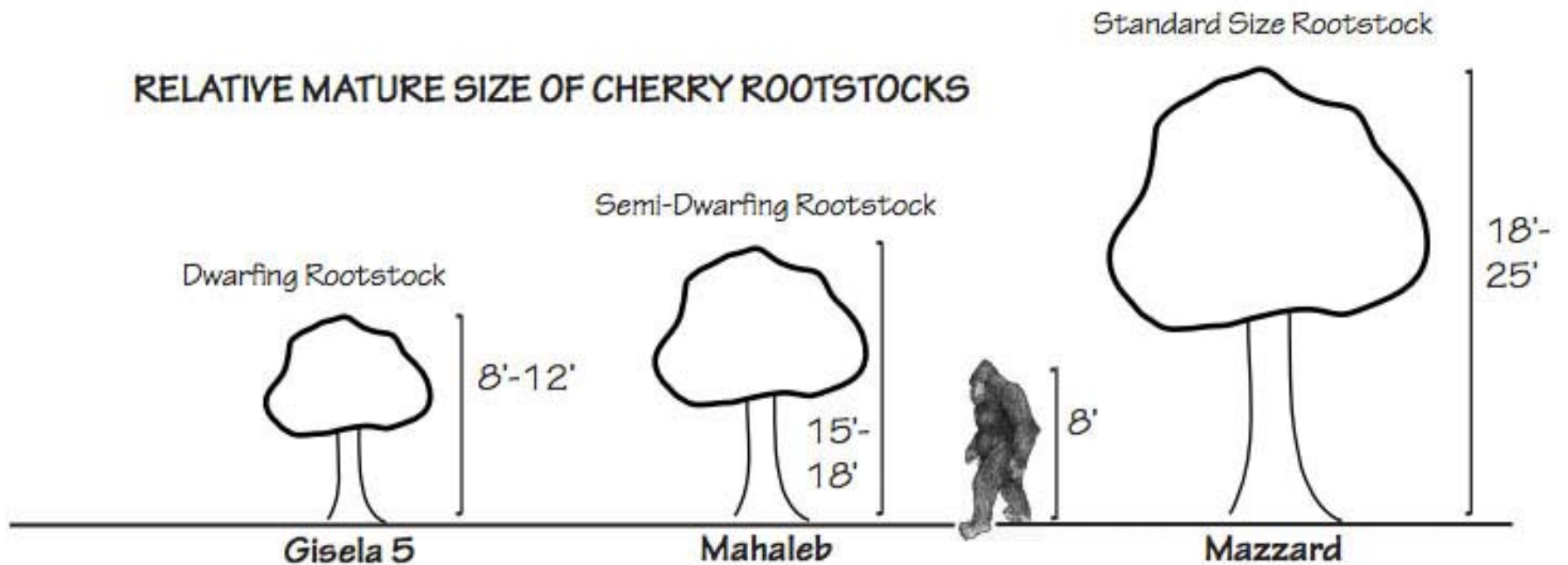
Pollination Chart for Prunus

- Western Sand Cherry - NC - *P. besseyi*
- Pin Cherry - NC - *P. pensylvanica*
- Canadian Plum - NP - *P. nigra*
- Compass Cherry-Plum - A
- Convoy Cherry-Plum - A
- Manor Cherry-Plum - A
- Nanking Cherry - NC - *P. tomentosa*
- Opata Cherry-Plum - A
- Sapa Cherry-Plum - A
- Sepaifa Cherry-Plum - A
- Pembina Plum - A
- Pipestone Plum - A
- Tecumseh Plum - A
- Toka Plum - A
- Wanata Plum - A
- Brookgold Plum - J
- Brookred Plum - J
- Pilsen #5 Plum - J
- Mount Royal Plum - E
- Evans Cherry - SC
- Northstar Cherry - SC
- Romantic Series Cherry - SC
- Rose Cherry - SC
- Mandchurian/Siberian Apricot

	Western Sand Cherry - NC - <i>P. besseyi</i>	Pin Cherry - NC - <i>P. pensylvanica</i>	Canadian Plum - NP - <i>P. nigra</i>	Compass Cherry-Plum - A	Convoy Cherry-Plum - A	Manor Cherry-Plum - A	Nanking Cherry - NC - <i>P. tomentosa</i>	Opata Cherry-Plum - A	Sapa Cherry-Plum - A	Sepaifa Cherry-Plum - A	Pembina Plum - A	Pipestone Plum - A	Tecumseh Plum - A	Toka Plum - A	Wanata Plum - A	Brookgold Plum - J	Brookred Plum - J	Pilsen #5 Plum - J	Mount Royal Plum - E	Evans Cherry - SC	Northstar Cherry - SC	Romantic Series Cherry - SC	Rose Cherry - SC	Mandchurian/Siberian Apricot
Western Sand Cherry - NC - <i>P. besseyi</i>				X	X		X	X		X	X	X	X			X								
Pin Cherry - NC - <i>P. pensylvanica</i>			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Canadian Plum - NP - <i>P. nigra</i>			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
Compass Cherry-Plum - A		X	X		X	X	X	X	X			X	X	X	X	X	X							
Convoy Cherry-Plum - A	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X							
Manor Cherry-Plum - A	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X							
Nanking Cherry - NC - <i>P. tomentosa</i>		X	X	X	X	X	X	X	X			X	X	X	X									X
Opata Cherry-Plum - A	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X							
Sapa Cherry-Plum - A	X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X							
Sepaifa Cherry-Plum - A		X	X	X	X	X	X	X				X	X	X	X									
Pembina Plum - A	X	X	X		X	X		X	X			X	X	X		X								
Pipestone Plum - A	X	X	X		X	X		X	X		X		X	X		X								
Tecumseh Plum - A	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X							
Toka Plum - A	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X							
Wanata Plum - A		X	X	X	X	X	X	X	X			X	X		X		X							
Brookgold Plum - J		X	X	X	X	X	X	X	X			X	X	X		X								
Brookred Plum - J	X	X	X		X	X		X	X		X	X	X											
Pilsen #5 Plum - J		X	X	X	X	X	X	X	X			X	X	X	X	X								
Mount Royal Plum - E																				X				
Evans Cherry - SC																					X			
Northstar Cherry - SC																						X		
Romantic Series Cherry - SC																							X	
Rose Cherry - SC																								X
Mandchurian/Siberian Apricot						X																		X

NC - Native Cherry NP - Native Plum SC - Sour Cherry J - Japanese Plum A - American Hybrid Plum E - European

Rootstock Amur Giant Chokecherry Best



Pollination websites

- Orange Pippin Fruit Trees
<https://www.orangepippintrees.co.uk/pollinationchecker.aspx> can look up variety and see what pollinates not all Alaska varieties but good
- Oregon State University Extension – has a downloadable Sweet Cherry Compatibility & Bloom Timing Chart, organized by group codes, Oregon State University Extension, download pdf.
- Dave Willson Nursery – website has an extensive Cherry Bloom Sequence and Pollenizers table.

Raintree Nursery

- Fruit Cocktail(F/PG/HR/S/IT/L)/St Julian A
- Gardeners love to talk about the soul soothing value of fruit growing. However, the value of shocking your friends and neighbors with your hobby is too often overlooked in literature. Imagine one tree that grows Frost Peach, Puget Gold Apricot, Hardired Nectarine, Stella Cherry, Italian Prune and Lapins Cherry! It is on a prunica interstem which makes it possible to have cherries on the same tree as the others.
- It is self-fertile too!
- The tree is on St Julian A rootstock and can be maintained at 15 feet in height.

Fungicide choices in 2011 for powdery mildew management in Washington cherries

Trade name	Chemical name	Class	FRAC group ¹	Resistance risk
Abound	azoxystrobin	QoI	11	High
Adament ¹	tebuconazole +	DMI	3	Medium
	trifloxystrobin	QoI	11	High
Armicarb	potassium bicarbonate	bicarbonate	Not classified	Low
Cabrio	pyraclostrobin	QoI	11	High
Elite	tebuconazole	DMI	3	Medium
Gem	trifloxystrobin	QoI	11	High
JMS Stylet Oil	light summer oil	PDSO	Not classified	Low
Kaligreen	potassium bicarbonate	bicarbonate	Not classified	Low
Pristine ²	pyraclostrobin +	QoI	11	High
	boscalid	carboximide	7	Medium
Procure	triflumizole	DMI	3	Medium
Regalia	extract of <i>Reynoutria soehalensis</i>	Plant host inducer	P	Low
Quash	metconazole	DMI	3	Medium
Quintec	quinoxifen	Quinoline	13	Medium
Rally	myclobutanil	DMI	3	Medium
Regalia	extract of <i>Reynoutria soehalensis</i>	Plant host inducer	P	Low
Rubigan, Focus, Vintage, others	fenarimol	DMI	3	Medium
Serenade Max	<i>Bacillus subtilis</i>	Biological	44	Low
Sonata	<i>Bacillus pumilus</i>	Biological	44	Low
Sulfur	sulfur	sulfur	M2	Low
Unicorn ¹	tebuconazole +	DMI	3	Medium
	sulfur	sulfur	M2	Low

Trade names in bold are new to the industry in 2011.

¹ Fungicide Resistance Action Committee

² Patent (combination of two modes of action or FRAC group)

SOURCE: Gary Geve, Washington State University

Grape fungicides available in 2011 for Washington State growers

Trade names	Active ingredients	Class	FRAC group ¹	Resistance risk
Abound	azoxystrobin	QoI	11	High
Adament ¹	tebuconazole	DMI	3	Medium
	+ trifloxystrobin	QoI	11	High
Armicarb	potassium bicarbonate	Carbonate	NC	Low
Flint	trifloxystrobin	QoI	11	High
Inspire Super ¹	difenoconazole	DMI	3	Medium
	+ cyprodinil	AP	9	Medium
JMS Stylet Oil	narrow-ranged petroleum oil	PDSO	NC	Low
Kaligreen	potassium bicarbonate	Carbonate	NC	Low
Pristine ²	pyraclostrobin	QoI	11	High
	+ boscalid	Carboxamide	7	Medium
Rally	myclobutanil	DMI	3	Medium
Regalia	extract of <i>Reynoutria soehalensis</i>	Plant host inducer	P	Low
Serenade Max	<i>Bacillus subtilis</i>	Biological	44	Low
Sonata	<i>Bacillus pumilus</i>	Biological	44	Low
Quintec	quinoxifen	Quinoline	13	Medium
Rubigan ¹	fenarimol ¹	DMI	3	Medium
Sovran	kresoxim-methyl	QoI	11	High
Sulfur	sulfur	sulfur	M2	Low
Unicorn ¹	tebuconazole	DMI	3	Medium
	+ sulfur	sulfur	M2	Low
Vivando	metrafenone	benzophenone	U8	Medium

¹ Fungicide Resistance Action Committee

² Patent (combination of two modes of action or FRAC group)

¹ Active ingredient (fenarimol) available under different trade names (eg Focus and Vintage)

SOURCE: Gary Geve, Washington State University

Genome research cherries

- <https://npgsweb.ars-grin.gov/gringlobal/descriptors.aspx?cropid=158>
- Can order scion wood before Jan 10th for research or educational purposes gives info where scion wood found, size fruit, color, bloom time, harvest time, stone size, soluble content, and compares to other cherries.