

Family: *Rosaceae*

Taxon: *Rubus hybr.**

Synonym: *Chehalem (Santiam x R. Armeniacus) x Olalli* **Common Name:** Rubus 'Marion'
Marionberry
Olallieberry
youngberry

Questionnaire :	current 20090513	Assessor:	Chuck Chimera	Designation: EVALUATE
Status:	Assessor Approved	Data Entry Person:	Chuck Chimera	WRA Score 4
101	Is the species highly domesticated?		y=-3, n=0	n
102	Has the species become naturalized where grown?		y=1, n=-1	
103	Does the species have weedy races?		y=1, n=-1	
201	Species suited to tropical or subtropical climate(s) - If island is primarily wet habitat, then substitute "wet tropical" for "tropical or subtropical"		(0-low; 1-intermediate; 2-high) (See Appendix 2)	Low
202	Quality of climate match data		(0-low; 1-intermediate; 2-high) (See Appendix 2)	Intermediate
203	Broad climate suitability (environmental versatility)		y=1, n=0	n
204	Native or naturalized in regions with tropical or subtropical climates		y=1, n=0	n
205	Does the species have a history of repeated introductions outside its natural range?		y=-2, ?=-1, n=0	y
301	Naturalized beyond native range		y = 1*multiplier (see Appendix 2), n= question 205	n
302	Garden/amenity/disturbance weed		n=0, y = 1*multiplier (see Appendix 2)	
303	Agricultural/forestry/horticultural weed		n=0, y = 2*multiplier (see Appendix 2)	n
304	Environmental weed		n=0, y = 2*multiplier (see Appendix 2)	n
305	Congeneric weed		n=0, y = 1*multiplier (see Appendix 2)	y
401	Produces spines, thorns or burrs		y=1, n=0	y
402	Allelopathic		y=1, n=0	
403	Parasitic		y=1, n=0	n
404	Unpalatable to grazing animals		y=1, n=-1	
405	Toxic to animals		y=1, n=0	n
406	Host for recognized pests and pathogens		y=1, n=0	y
407	Causes allergies or is otherwise toxic to humans		y=1, n=0	n
408	Creates a fire hazard in natural ecosystems		y=1, n=0	n
409	Is a shade tolerant plant at some stage of its life cycle		y=1, n=0	
410	Tolerates a wide range of soil conditions (or limestone conditions if not a volcanic island)		y=1, n=0	n

411	Climbing or smothering growth habit	y=1, n=0	n
412	Forms dense thickets	y=1, n=0	
501	Aquatic	y=5, n=0	n
502	Grass	y=1, n=0	n
503	Nitrogen fixing woody plant	y=1, n=0	n
504	Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)	y=1, n=0	n
601	Evidence of substantial reproductive failure in native habitat	y=1, n=0	n
602	Produces viable seed	y=1, n=-1	y
603	Hybridizes naturally	y=1, n=-1	
604	Self-compatible or apomictic	y=1, n=-1	
605	Requires specialist pollinators	y=-1, n=0	n
606	Reproduction by vegetative fragmentation	y=1, n=-1	y
607	Minimum generative time (years)	1 year = 1, 2 or 3 years = 0, 4+ years = -1	2
701	Propagules likely to be dispersed unintentionally (plants growing in heavily trafficked areas)	y=1, n=-1	
702	Propagules dispersed intentionally by people	y=1, n=-1	y
703	Propagules likely to disperse as a produce contaminant	y=1, n=-1	
704	Propagules adapted to wind dispersal	y=1, n=-1	n
705	Propagules water dispersed	y=1, n=-1	n
706	Propagules bird dispersed	y=1, n=-1	y
707	Propagules dispersed by other animals (externally)	y=1, n=-1	n
708	Propagules survive passage through the gut	y=1, n=-1	y
801	Prolific seed production (>1000/m2)	y=1, n=-1	
802	Evidence that a persistent propagule bank is formed (>1 yr)	y=1, n=-1	
803	Well controlled by herbicides	y=-1, n=1	
804	Tolerates, or benefits from, mutilation, cultivation, or fire	y=1, n=-1	y
805	Effective natural enemies present locally (e.g. introduced biocontrol agents)	y=-1, n=1	

Designation: EVALUATE

WRA Score 4

Supporting Data:

101	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Is the species highly domesticated?? No] "Orig. in Corvallis, Ore., by George F. Waldo, U.S. Dept. of Agriculture and Oregon Agr. Expt. Sta. Introd. in 1956. Chehalem x Olallie; cross made in 1945; selected in 1948; tested as US Oregon 928. Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black, not as bright as Chehalem or Evergreen, but more attractive than Boysen; flesh medium firm; quality high with excellent flavor, generally superior to Boysen or Evergreen; excellent for local markets, canning, freezing, pies, ice cream flavoring, jams, jellies; harvest season more favorable than Evergreen, ripening in Boysen season and before Evergreen in Oregon; resembles Himalaya or Chehalem. Bush: trailing; vigorous grower; generally only a few long canes, up to 20 ft long; spines large and numerous; fruiting laterals long and strong with many fruits; very productive, more so than Boysen, higher yields for a longer period than Boysen; adapted to western Oregon and western Washington. Named after Marion County, in which it was tested extensively. B&O" [Although this is an artificial cultivar, there does not appear to be any significant loss of competitive traits. There is not enough evidence at this time to conclude that this cultivar has lost its ability to survive without human assisted cultivation.]
102	2012. WRA Specialist. Personal Communication.	NA
103	2012. WRA Specialist. Personal Communication.	NA
201	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Species suited to tropical or subtropical climate(s) 0-Low] "Propagation: Usually by cuttings or suckers. Can also be propagated by seeds, which generally come true to parent plants. Seeds can be cold stratified for 2 3 months prior to planting." ... "Native Range: Released in 1956, the marionberry is a USDA created cross between the Ollalieberry (<i>Rubus ursinus</i>) and Chehalem (<i>Rubus armeniaus</i>) variety of blackberry. Today it is mostly grown commercially in the Pacific Northwest, specifically Oregon." [For the special cases of a temperate species whose seeds have been reported to require cold stratification for germination, the answer to this question is 0(low) and the answer to question 2.02 is 1 (intermediate) regardless of knowledge of the species native range. Curt Daehler, pers. comm.]
202	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Quality of climate match data? 1-intermediate] "Propagation: Usually by cuttings or suckers. Can also be propagated by seeds, which generally come true to parent plants. Seeds can be cold stratified for 2-3 months prior to planting." [For the special cases of a temperate species whose seeds have been reported to require cold stratification for germination, the answer to this question is 0(low) and the answer to question 2.02 is 1 (intermediate) regardless of knowledge of the species native range. Curt Daehler, pers. comm.]
203	1996. Cortell, J.M.. Effect of Floricane Number on Primocane Growth. Yield Components, and Cold Hardiness in 'Marion' Trailing Blackberry. MSc Thesis. Oregon State University, Corvallis, OR	[Broad climate suitability (environmental versatility)? No] "'Marion' is the least hardy blackberry cultivar grown commercially in Oregon. Winter injury has resulted in fluctuating prices and unstable markets as well as direct crop loss (Conroy, 1967)."
203	1997. Cortell, J.M./Strik, B.C.. Effect of Floricane Number in 'Marion' Trailing Blackberry. II. Yield Components and Dry Mass Partitioning. Journal of the American Society for Horticultural Science. 122(5): 611-615.	[Broad climate suitability (environmental versatility)? No] "Two of the major production problems for 'Marion' are a low percent budbreak and relatively poor cold hardiness. Poor budbreak may be a result of many factors including winter injury, disease problems, poor light exposure, and intracane competition for resources. Alternative production systems in 'Marion' blackberry may improve cold hardiness and budbreak (Bell et al., 1992, 1995)."
203	2012. Dave's Gardern. PlantFiles: PlantFiles: Marion Blackberry, Marionberry - Rubus 'Marion'. http://davesgarden.com/guides/pf/go/110066/	[Broad climate suitability (environmental versatility)? No] "Hardiness: USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F)"
203	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Broad climate suitability (environmental versatility)? No] "Plants are adapted well to cooler, maritime climates with summer heat." [No evidence]
204	2012. Dave's Gardern. PlantFiles: PlantFiles: Marion Blackberry, Marionberry - Rubus 'Marion'. http://davesgarden.com/guides/pf/go/110066/	[Native or naturalized in regions with tropical or subtropical climates? No] "Hardiness: USDA Zone 7b: to -14.9 °C (5 °F) USDA Zone 8a: to -12.2 °C (10 °F) USDA Zone 8b: to -9.4 °C (15 °F) USDA Zone 9a: to -6.6 °C (20 °F) USDA Zone 9b: to -3.8 °C (25 °F)"
204	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Native or naturalized in regions with tropical or subtropical climates? No] "Plants are adapted well to cooler, maritime climates with summer heat." [But would likely do well at higher elevations]

204	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Native or naturalized in regions with tropical or subtropical climates? Presumably No] "fruiting laterals long and strong with many fruits; very productive, more so than Boysen, higher yields for a longer period than Boysen; adapted to western Oregon and western Washington."
205	1997. Finn, C./Strik, B./Lawrence, F.J.. 'Marion' Trailing Blackberry. Fruit Varieties Journal. 51(3): 130-133.	[Does the species have a history of repeated introductions outside its natural range? Yes] "'Marion' is the most widely planted blackberry cultivar in the world. In Oregon, which leads the world in production of blackberries, 'Marion,' often called "marionberry" by consumers and marketers, has been the dominant cultivar since the early 1980's when it replaced 'Thornless Evergreen' as the most widely planted cultivar (15)."
301	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Naturalized beyond native range? No] No evidence
301	2012. eHow. How to Grow Marion Berries. http://www.ehow.com/how_4530152_grow-marion-berries.html	[Naturalized beyond native range? No] "In Oregon, you can find marionberries growing wild along the roadside. Through the spring and early summer months, you will see cars stopped and people with their brightly colored plastic buckets in the early morning hours, picking these berries. Originally they were developed by the U.S. Department of Agriculture and Oregon State University in 1956. This variety of blackberries was named after Marion County, Oregon and can be found mainly in the Salem area. Although, marionberries do grow wild, there are almost 900 commercial marionberry growers in the Oregon Willamette Valley. With the right climate, spring rains and warm day with cool night summers, you can grow a bramble of marionberries in your backyard garden." [Hybrid created from Rubus species native to Oregon]
301	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Naturalized beyond native range? No] "Orig. in Corvallis, Ore., by George F. Waldo, U.S. Dept. of Agriculture and Oregon Agr. Expt. Sta. Introd. in 1956. Chehalem x Olallie; cross made in 1945; selected in 1948; tested as USOregon 928." [Artificial cultivar used primarily in cultivation]
302	2008. Goodridge, J.M./Bixby, M./Winter-Gorsline, L./Tu, M./Anderson, S./Harber, R./Douglas, J./McMahan, L./Chan, S.. GardenSmart Oregon : a guide to non-invasive plants. OSU. Extension Service, Corvallis OR http://hdl.handle.net/1957/19857	[Garden/amenity/disturbance weed? No] No evidence. [Recommended as a non-invasive alternative to Rubus armeniacus, R. discolor, and R. procerus]
302	2012. GardenAway. Rubus 'Marion'. http://gardenaway.com/plants/rubus-marion.html	[Garden/amenity/disturbance weed? Potentially] "Thorns can make Rubus 'Marion' (blackberry) difficult to handle and careful planning of its siting in the garden will reduce the risk of injuries to children or pets. The growth rate of Rubus 'Marion' (blackberry) is fast and you should plan for this in your garden design and layout." [Could become problematic if left unmaintained in a yard or garden]
303	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Agricultural/forestry/horticultural weed? No] No evidence
303	2008. Goodridge, J.M./Bixby, M./Winter-Gorsline, L./Tu, M./Anderson, S./Harber, R./Douglas, J./McMahan, L./Chan, S.. GardenSmart Oregon : a guide to non-invasive plants. OSU. Extension Service, Corvallis OR http://hdl.handle.net/1957/19857	[Agricultural/forestry/horticultural weed? No] No evidence. [Recommended as a non-invasive alternative to Rubus armeniacus, R. discolor, and R. procerus]
304	2007. Randall, R.P.. Global Compendium of Weeds - Index [Online Database]. http://www.hear.org/gcw/	[Environmental weed? No] No evidence
304	2008. Goodridge, J.M./Bixby, M./Winter-Gorsline, L./Tu, M./Anderson, S./Harber, R./Douglas, J./McMahan, L./Chan, S.. GardenSmart Oregon : a guide to non-invasive plants. OSU. Extension Service, Corvallis OR http://hdl.handle.net/1957/19857	[Environmental weed? No] No evidence. [Recommended as a non-invasive alternative to Rubus armeniacus, R. discolor, and R. procerus]
304	2009. Invasive Plant Council of British Columbia. Grow Me Instead - Beautiful Non-Invasive Plants for your Garden. www.invasiveplantcouncilbc.ca	[Environmental weed? No] "Invasive: Himalayan Blackberry - Rubus discolor Alternatives: Thimbleberry Rubus parviflorus*, Black Huckleberry Vaccinium membranaceum*, Thornless Blackberry Marionberry-Boysenberry Rubus ssp" [Promoted as a non-invasive alternative in British Columbia]
304	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Environmental weed? No] "Invasive - No" ... "Self-Sowing - No" [No evidence]

305	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Congeneric weed? Yes] "Rubus argutus ... forms impenetrable thickets ... Rubus cuneifolius ... plant coppices vigorously and forms dense thickets ... Rubus ellipticus ... shrub forms impenetrable thickets that displace native vegetation and affect wildlife by impeding movement and reducing habitats ... Rubus fruticosus...forms extensive and dense impenetrable thickets, shading out all other vegetation, displacing it and affecting wildlife habitats ... Rubus niveus ... displaces native vegetation, impedes regeneration of native shrubs and trees and affect wildlife habitats ... Rubus ulmifolius ... grows in dense patches that displace native vegetation ..."
401	2012. GardenAway. Rubus 'Marion'. http://gardenaway.com/plants/rubus-marion.html	[Produces spines, thorns or burrs? Yes] "Thorns can make Rubus 'Marion' (blackberry) difficult to handle and careful planning of its siting in the garden will reduce the risk of injuries to children or pets."
401	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Produces spines, thorns or burrs? Yes] "Sharp or Has Thorns - Yes"
401	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Produces spines, thorns or burrs? Yes] "Bush: trailing; vigorous grower; generally only a few long canes, up to 20 ft long; spines large and numerous"
402	1988. Coté, J.-F./Thibault, J.-R.. Allelopathic Potential of Raspberry Foliar Leachates on Growth of Ectomycorrhizal Fungi Associated with Black Spruce. American Journal of Botany 75(7): 966-970. 75(7): 966-970.	[Allelopathic? Unknown] "In vitro bioassays on seven species of ectomycorrhizal fungi associated with black spruce (<i>Picea mariana</i> (Mill.) BSP) were tested under allelopathic action of raspberry (<i>Rubus idaeus</i> L.). Radial growth inhibitions were observed when fungi were confronted with increasing concentrations (0%/0.1% 0.5%/0.2.5%) of foliar leachates made from May, July, and September material (1986). For the 2.5% treatments, species <i>Paxillus involutus</i> , <i>Laccaria proxima</i> , <i>Laccaria bicolor</i> , <i>Thelephora terrestris</i> and <i>Cortinarius pseudonapus</i> grew only 6, 8, 32, 42, and 46% of their control, whereas <i>Hebeloma cylindrosporum</i> and <i>Cenococcum geophilum</i> were stimulated. Tree seedlings from raspberry invaded plantation showed mycorrhizal infection rate over 75%, with fine roots mainly colonized by <i>C. geophilum</i> . In combination with efforts of tree improvement and based on the results of this study, it seems important to select a well-adapted mycorrhizae, when interference by raspberry is involved." [Some Rubus species can exhibit allelopathic properties, but no evidence exists to suggest that Rubus 'Marion' is allelopathic]
403	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Parasitic? No] Rubus [Genus is not parasitic]
404	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Unpalatable to grazing animals? Unknown] "generally only a few long canes, up to 20 ft long; spines large and numerous" [No information availability on the palatability of this cultivar, but it is likely that the spines would deter browsing]
405	1997. Finn, C./Strik, B./Lawrence, F.J.. 'Marion' Trailing Blackberry. Fruit Varieties Journal. 51(3): 130-133.	[Toxic to animals? No] "'Marion' is the most widely planted blackberry cultivar in the world. In Oregon, which leads the world in production of blackberries, 'Marion,' often called 'marionberry' by consumers and marketers, has been the dominant cultivar since the early 1980's when it replaced 'Thornless Evergreen' as the most widely planted cultivar (15)." [Commercial cultivar created for human consumption with no reported evidence of toxic or allergenic effects]
406	2003. Strik, B.. Impact of Raspberry bushy dwarf virus on 'Marion' Blackberry. Plant Disease. 87(3): 294-296.	[Host for recognized pests and pathogens? Yes] "Raspberry bushy dwarf virus (RBDV), genus <i>Idaeovirus</i> , was first observed in 1997 in a planting of 'Marion' blackberry (a complex hybrid with <i>Rubus idaeus</i> , <i>R. procerus</i> , and <i>R. ursinus</i> in its background) established at the North Willamette Research and Extension Center (Aurora, OR) from tissue-cultured plants in 1993. RBDV was detected in 128 of the 280 plants. The incidence of RBDV in this planting did not increase from 1997 through 2001. In 1999 and 2000, we evaluated the impact of RBDV on yield, fruit quality, and plant growth of 'Marion' blackberry. RBDV had no effect on cane growth or fruit number, but it reduced yield (40 to 50%), fruit weight (23 to 40%), and drupelet number per fruit (36 to 39%) compared with uninfected plants. In 2000, we surveyed 32 commercial 'Marion' fields for RBDV using enzyme linked immunosorbent assay. The locations of sampled fields were selected to reflect the acreage distribution of 'Marion' blackberry production in Oregon. RBDV-infected plants were detected in three fields."

407	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Causes allergies or is otherwise toxic to humans? No] "Uses: A delicious fresh fruit and one of the more common commercial blackberries in the Pacific Northwest. Fruits can also be squeezed for juice and used in desserts." [Commercial cultivar created for human consumption with no reported evidence of toxic or allergenic effects]
407	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Causes allergies or is otherwise toxic to humans? No] "A tasty blackberry variety bearing dark, purple-black fruits that are full of tart-sweet flavor and juice. Very good for fresh eating with fruits tending to have a sweeter flavor and more juice than some of the other common blackberry varieties." ... "excellent for local markets, canning, freezing, pies, ice cream flavoring, jams, jellies; harvest season more favorable than Evergreen"
408	2008. Goodridge, J.M./Bixby, M./Winter-Gorsline, L./Tu, M./Anderson, S./Harber, R./Douglas, J./McMahan, L./Chan, S.. GardenSmart Oregon : a guide to non-invasive plants. OSU. Extension Service, Corvallis OR http://hdl.handle.net/1957/19857	[Creates a fire hazard in natural ecosystems? No] No evidence of fire hazard from this plant, which is recommended as a non-invasive alternative to invasive Rubus species.
409	2012. Dave's Gardern. PlantFiles: PlantFiles: Marion Blackberry, Marionberry - Rubus 'Marion'. http://davesgarden.com/guides/pt/go/110066/	[Is a shade tolerant plant at some stage of its life cycle? Possibly No] "Sun Exposure: Full Sun"
409	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Is a shade tolerant plant at some stage of its life cycle? Possibly Yes] "This relatively cold-tender cultivar requires sun and well drained, humus-rich soil, but may benefit from some shade in hot-summer climates."
409	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Is a shade tolerant plant at some stage of its life cycle? Possibly No] "Though plants enjoy full sun, keep out of very hot, dry, full sun. "
410	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Tolerates a wide range of soil conditions ? No] "Soil pH - Acidic, Neutral" ... "Soil type - Loam"
411	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Climbing or smothering growth habit? No] "Bush: trailing; vigorous grower; generally only a few long canes, up to 20 ft long; spines large and numerous" [May have the potential to climb over other plants, but no evidence was found within areas of cultivation]
412	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Forms dense thickets? Possibly] "Growing Environment: Vines tend to grow in large thickets and do well with support."
501	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Aquatic? No] "Bush: trailing; vigorous grower; generally only a few long canes, up to 20 ft long; spines large and numerous;"
502	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Grass? No] Rosaceae
503	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Nitrogen fixing woody plant? No] Rubus [Although some Rosacea are nitrogen fixing, there is no evidence that members of the genus Rubus are]
504	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Geophyte (herbaceous with underground storage organs -- bulbs, corms, or tubers)? No] No evidence

601	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Evidence of substantial reproductive failure in native habitat? No] "Orig. in Corvallis, Ore., by George F. Waldo, U.S. Dept. of Agriculture and Oregon Agr. Expt. Sta. Introd. in 1956. Chehalem x Olallie; cross made in 1945; selected in 1948; tested as US Oregon 928. Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black, not as bright as Chehalem or Evergreen, but more attractive than Boysen; flesh medium firm; quality high with excellent flavor, generally superior to Boysen or Evergreen; excellent for local markets, canning, freezing, pies, ice cream flavoring, jams, jellies; harvest season more favorable than Evergreen, ripening in Boysen season and before Evergreen in Oregon; resembles Himalaya or Chehalem. Bush: trailing; vigorous grower; generally only a few long canes, up to 20 ft long; spines large and numerous; fruiting laterals long and strong with many fruits; very productive, more so than Boysen, higher yields for a longer period than Boysen; adapted to western Oregon and western Washington. Named after Marion County, in which it was tested extensively. B&O" [An artificial cultivar]
602	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Produces viable seed? Yes] "Propagation: Usually by cuttings or suckers. Can also be propagated by seeds, which generally come true to parent plants. Seeds can be cold stratified for 2-3 months prior to planting."
603	2009. Hummer, K.E./Janick, J.. Rosaceae: Taxonomy, Economic Importance, Genomics. Plant Genetics & Genomics: Crops and Models. 6(1): 1-17.	[Hybridizes naturally? Unknown] "Brambles. Bramble is a collective term for various prickly shrubs sometimes classified horticulturally as small, bush, or berry fruits. All brambles are species of Rubus, a taxonomically complex group that includes blackberry (European and American species), raspberries (<i>R. idaeus</i>) and various hybrids. Hybrid combinations include upright and trailing types such as eastern dewberry (<i>R. trivialis</i>) and blackberry x raspberry crosses such as youngberry, marionberry, loganberry, and tayberry. Raspberries include red raspberry, black raspberry (<i>R. occidentalis</i> and <i>R. leucodermis</i>), and purple raspberry (black raspberry x black raspberry)." [Rubus 'Marion' an artificial cultivar created by hybridization. No evidence of natural hybridization reported]
604	2005. Cane, J.H.. Pollination Potential of the Bee <i>Osmia aglaia</i> for Cultivated Red Raspberries and Blackberries (<i>Rubus</i> : Rosaceae). HortScience October. 40(6): 1705-1708.	[Self-compatible or apomictic? Possibly] "Fruit production by cultivated cane fruit benefits from pollinator visitation. Wild red (<i>Rubus idaeus</i> L.) and black (<i>R. occidentalis</i> L.) raspberries are diploid, sexual and self-incompatible, but their cultivated derivatives are all self-fertile (Jennings, 1988). Cultivated blackberries are likewise self-fertile, but typically they are polyploids derived from complex crosses of true blackberries and red raspberries (Jennings, 1988). Some self- or autopollination occurs with many of these cultivars, whereby stigmas of outer pistils passively pick up pollen from contact with the surrounding ring of stamens.
605	2008. Burgett, M.. Pacific Northwest Honey Bee Pollination Economics Survey 2007. National Honey Report. 29(11): 10-16.	[Requires specialist pollinators? No] "Berry crops (blackberries, Marion berries, Logan berries, raspberries), are late spring to early summer bloomers and most often copious nectar producers. The 2007 average pollination fee for combined berry crops was \$34.35, a lower price than the average fee because beekeepers have an expectation that a honey crop will also be produced." [Presumably pollinated by honey bees]
606	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Reproduction by vegetative fragmentation? Yes] "Propagation: Usually by cuttings or suckers. Can also be propagated by seeds, which generally come true to parent plants. Seeds can be cold stratified for 2-3 months prior to planting." [Rubus species able to spread vegetatively by underground canes]
607	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Minimum generative time (years)? Likely 2 years] "It flowers and fruits on second-year wood, which should be pruned to the ground in fall."
607	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Minimum generative time (years)? Likely 2 years] "Description: A fast-growing bramble-like vine that can produce canes up to 20 feet long? [primocanes typically produced in first year, and floricanes in second]
701	2003. Starr, F./Starr, K./Loope, L.L.. Rubus ellipticus - Yellow Himalayan raspberry - Rosaceae. USGS - Biological Resources Haleakala Field Station Maui, http://www.hear.org/starr/hiplants/reports/pdf/rubus_ellipticus.pdf	[Propagules likely to be dispersed unintentionally? Unknown] "On Maui, <i>R. ellipticus</i> is not yet established in the wild. However, plants have been observed on hapu'u (<i>Cibotium</i> spp.) tree ferns and parts that are shipped from infested areas of Hawai'i. ... These ferns appear "clean" during transport, then seeds sprout some time later in their new locations. There are likely more locations on Maui where <i>Rubus ellipticus</i> will be found in the future. <i>Rubus ellipticus</i> is a noxious weed and strategies for preventing inter-island transport are needed." [Unknown for Rubus 'Marion', but potential exists for inadvertent transport of seeds as has been documented with <i>Rubus ellipticus</i>]
702	2012. Trade Winds Fruit. Marionberry - Rubus x. http://www.tradewindsfruit.com/marionberry.htm	[Propagules dispersed intentionally by people? Yes] "Uses: A delicious fresh fruit and one of the more common commercial blackberries in the Pacific Northwest. Fruits can also be squeezed for juice and used in desserts."

702	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Propagules dispersed intentionally by people? Yes. Edible fruit] "flesh medium firm; quality high with excellent flavor, generally superior to Boysen or Evergreen; excellent for local markets, canning, freezing, pies, ice cream flavoring, jams, jellies; harvest season more favorable than Evergreen, ripening in Boysen season and before Evergreen in Oregon"
703	2003. Starr, F./Starr, K./Loope, L.L.. Rubus ellipticus - Yellow Himalayan raspberry - Rosaceae. USGS - Biological Resources Haleakala Field Station Maui, http://www.hear.org/starr/hiplants/reports/pdf/rubus_ellipticus.pdf	[Propagules likely to disperse as a produce contaminant? Unknown] "On Maui, R. ellipticus is not yet established in the wild. However, plants have been observed on hapu'u (Cibotium spp.) tree ferns and parts that are shipped from infested areas of Hawai'i. ... These ferns appear "clean" during transport, then seeds sprout some time later in their new locations. There are likely more locations on Maui where Rubus ellipticus will be found in the future. Rubus ellipticus is a noxious weed and strategies for preventing inter-island transport are needed." [Unknown for Rubus 'Marion', but potential exists for inadvertent seed contamination of tree fern trunks, or other produce, as has been documented with Rubus ellipticus]
704	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Propagules adapted to wind dispersal? No] "Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black"
705	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Propagules water dispersed? Probably Not] "Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black, not as bright as Chehalem or Evergreen, but more attractive than Boysen" [No adaptations for water dispersal]
706	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Propagules bird dispersed? Presumably Yes] "Attracts - Birds"
706	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Propagules bird dispersed? Yes] "Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black, not as bright as Chehalem or Evergreen, but more attractive than Boysen" [Seeded cultivars are presumably dispersed by birds and other vertebrate dispersers]
707	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Propagules dispersed by other animals (externally)? No] "Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black, not as bright as Chehalem or Evergreen, but more attractive than Boysen" [Unlikely. Rubus fruits are adapted for internal bird and vertebrate dissemination & lack means of external attachment]
708	2012. USDA, ARS, National Genetic Resources Program. Rubus hybrid - ROSACEAE. 'Marion' - Germplasm Resources Information Network - (GRIN). [Online Database]. : http://www.ars-grin.gov/cgi-bin/npgs/acc/display.pl?1448226	[Propagules survive passage through the gut? Yes] "Fruit: medium to large; round in cross diameter, somewhat longer than wide; individual drupelet and seed size medium; skin bright black, not as bright as Chehalem or Evergreen, but more attractive than Boysen" [Seeded cultivars are presumably dispersed by birds and other vertebrate dispersers, and seeds should survive passage through the gut]
801	2012. WRA Specialist. Personal Communication.	[Prolific seed production (>1000/m2)? Unknown] No information found on seed densities. Typically grown in a cultivated setting with for commercial harvest of fruit.
802	2008. Bonner, F.T./Karrfalt, R.P.. The Woody Plant Seed Manual. Government Printing Office, Washington, D.C.	[Evidence that a persistent propagule bank is formed (>1 yr)? Unknown] "Rubus seeds can be present in the forest floor of many forest types in North America (Barber 1976; Graber and Thompson 1978; Granstrom 1982; Maxwell 1990; McGee 1988; Moore and Wein 1977; Peterson and Carson 1996; Piroznikov 1983; Quick 1956; Ruth 1970; Whitney 1978; Yokohama and Suzuki 1986; Zasada 1996) long after the species has disappeared from the site. The longevity of seeds in the forest floor is believed to be on the order of decades to a century or more, indicating that seeds can be stored for long periods of times under seasonally alternating temperature and moisture conditions." [No information available on Rubus 'Marion' seeds]
803	2003. Weber, E.. Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, Wallingford, UK	[Well controlled by herbicides? Unknown for Rubus 'Marion'] Chemical control of several invasive Rubus species is described in greater detail, which suggests that herbicide use may be effective at controlling Rubus 'Marion', if necessary.
804	2012. Learn 2 Grow. Rubus 'Marion'. http://www.learn2grow.com/plants/rubus-marion/	[Tolerates, or benefits from, mutilation, cultivation, or fire? Yes] "It flowers and fruits on second-year wood, which should be pruned to the ground in fall. New canes should be pruned back by a third in summer." [Tolerates regular pruning to the ground]

805 2012. WRA Specialist. Personal Communication. [Effective natural enemies present locally? Unknown] Several naturalized species of *Rubus* have become highly invasive in the Hawaiian Islands, suggesting that natural enemies of *Rubus* species are not present or ineffective at preventing their spread.
