

ROOTSTOCKS FOR SWEET CHERRIES IN BRITISH COLUMBIA

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Mazzard rootstock is the predominate rootstock used in British Columbia today. It is still the main rootstock recommended even with its short comings such as: vigorous growth, large tree size, lack of precocity and slightly poorer yields. However it can be used in the majority of our soils and is well adapted to our cultivars with no reports of incompatibility problems with our scion cultivars. The clonal selection of mazzard, F12/1, has the same short comings as mazzard and is also slightly more vigorous than mazzard.

Colt has been used in British Columbia. It is as vigorous as mazzard and under our conditions produces a tree about the same size as mazzard. It may be slightly more precocious than mazzard and produces lateral branches with a more horizontal angle of attachment to the trunk. **The major concern with Colt is the possibility of winter injury problems in some years and in the colder sites of the province.**

New Rootstocks. None of the new rootstocks have been adequately tested in enough locations in the province with our scion cultivars to have confidence in making broad recommendations. However it is important to test these new rootstocks in British Columbia with the scion cultivars that are important to our industry. Growers need to be cautious when using these rootstocks. The leading candidates at the moment are Gisela7 5 (G5), Gisela7 6, Gisela7 12, and possibly Weiroot 158. Use of virus-free scion cultivars is extremely important as is fumigation of planting sites, especially if planting in an old cherry site. Also, trees with these rootstocks need to be more intensively managed to maintain good vigour and optimum fruit quality. This includes adequate nutrition and water, weed control and careful pruning and training. Self-fertile, precocious cultivars such as Sweetheart may not be a good combination with these rootstocks. Soil type also needs to be considered when choosing which rootstock to evaluate. Trees with these rootstocks especially G5 may not be suitable on very light soils. **Precocious rootstocks combined with precocious and very productive cultivars may lead to overcropping and eventual reduction in fruit quality and stunting of the tree.**

Untested Rootstocks. A number of new rootstocks from various breeding and evaluation programs are becoming available. These include the PiKu rootstocks from Dresden, Germany; the Czech rootstocks; P50 from Japan; rootstocks from Russia; and more Giessen, Weiroot, and Gembloux rootstocks. These are still in the very early stages of testing and evaluation around the world. Some of these rootstocks have not yet been planted in test plots in British Columbia. **Use extreme caution with these rootstock.**

Further Information

http://extension.oregonstate.edu/wasco/horticulture/Rootstocks/ai_rootstocks.html

Cherry Rootstock Information

Characteristic	F12/1 (mazzard)	mazzard (seedling)	P. mahaleb	Colt	Gisela® 5	Gisela® 6	Gisela® 12	W158	Tabel® Edabriz
Origin	East Malling, England P. avium	various P. avium	various P. mahaleb	East Malling, England P. avium x P. pseudocerasus	Giessen, Germany P. cerasus x P. canescens	Giessen, Germany P. cerasus x P. canescens	Giessen, Germany P. canescens x P. cerasus	Weihenstephan, Germany P. cerasus	France P. cerasus
Soil adaptation	wide adaptation, loam to clay-loam	loam to clay-loam	light, well drained; gravelly or sandy; requires very free drainage; tolerant of calcareous soils; Saint Lucia (SL) 64 wider adaptation than other mahalebs	requires fertile, well-drained and adequately irrigated soils for optimum production; not tolerant of shallow, dry, and highly calcareous soils	not tolerant of heavy clay soils	unknown	unknown	unknown, but sour cherries as a group tolerate wet soils better than other cherries; not tolerant of calcareous soils	loam to clay loam soils; may not be widely adapted; sensitive to chlorosis on soils with pH higher than 8.2
Sensitivity to saturated soils	probably similar to mazzard seedling	moderately tolerant of poorly drained soils	very sensitive; not tolerant of wet soils	appears to tolerate soils with poorer drainage	unknown, however hybrids with P. canescens are very sensitive to wet soils	unknown, however hybrids with P. canescens are very sensitive to wet soils	unknown, however hybrids with P. canescens are very sensitive to wet soils	unknown, however sour cherries as a group tolerate wet soils	unknown, however sour cherries as a group tolerate wet soils
Drought tolerance	not as adaptable as mahaleb	not as adaptable as mahaleb	adaptable to droughty soils	does not thrive	unknown	unknown	unknown	likely not tolerant	likely not tolerant
Method of propagation	vegetative, layering	seeds	seeds; SL 64 vegetative by softwood and semi-hardwood cuttings	easily propagated vegetatively	vegetative; good results with micropropagation; medium results with cuttings	vegetative	vegetative	vegetative; good results with semi-hardwood cuttings and micropropagation	vegetative; good results with micropropagation and cuttings
Root system	root system likely similar to mazzard	forms a deep root system which is well branched with a dense mat of highly fibrous roots near the soil surface	sparsely branched, deep, almost vertical roots; poorly branched and prone to deep, vertical rooting habit	high density of medium to small sized roots with many root hairs in the upper soil profile	unknown	unknown	unknown	Unknown	high density of medium sized roots with many root hairs in the upper soil profile; roots may be brittle

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Scion compatibility	good	good	dependent on rootstock clone and scion variety; premature death of the tree can occur; generally good with SL 64;	compatible with most varieties; some report problems with Van and Sam	early reports that compatibility appears good with most scion varieties	early reports that compatibility appears good with most scion varieties	early reports that compatibility appears good with most scion varieties	early reports that compatibility appears good with most scion varieties; other Weiroots have problems with the scion variety 'Sam'	has shown good compatibility with sweet cherry varieties in France. May not be a good choice for Sweetheart because of precocity of scion and precociousness of rootstock
Scion vigour	very vigorous	very vigorous; slightly less than trees on F12/1	vigorous; slightly less than mazzard	vigorous; similar to mahaleb	reports suggest 50% of standard	similar size tree as mazzard	standard size tree	reports suggest 50-75% of standard	reports suggest 50% of standard or slightly smaller
Precocity	poor	poor	slightly better than mazzard	reports suggest slightly better than mazzard but our trials show no difference	very good	good	reports suggest good but no direct experience	reports suggest good to fair	good to very good
Yield	average	average	slightly better than mazzard	average	good	good	unknown but likely good	Good	good

Cold hardiness	generally good	generally good but may depend on seed selection	more hardy than mazzard; rootstocks appear to induce better hardiness to scion than if on mazzard rootstock	considered to be not as cold hardy as mazzard	unknown	unknown	unknown	unknown but some Weiroot selections appear to be more cold-hardy than mazzard	unknown but sour cherry selections are considered the most cold hardy of the common rootstocks
Fruit size	good	good	good	good	rootstock can affect crop load which can reduce fruit size	rootstock can affect crop load which can reduce fruit size	rootstock can affect crop load which can reduce fruit size	rootstock can affect crop load which can reduce fruit size	rootstock can affect crop load which can reduce fruit size
Root suckers	medium	low	none	low	none to low	none to low	none to low	low to medium	low to medium

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Crown gall	sensitive	low	none	sensitive	unknown	unknown	unknown	Unknown	unknown
Phytophthora	tolerant	tolerant	sensitive	tolerant	unknown but may be sensitive	unknown	unknown	unknown but sour cherries have some tolerance	unknown but sour cherries have some tolerance
Virus sensitivity									
NRSV	tolerant	tolerant	tolerant	tolerant	tolerant	tolerant	tolerant	unknown but may be tolerant	some sensitivity
PRV	tolerant	tolerant	tolerant	tolerant	tolerant	tolerant	tolerant	unknown but may be tolerant	some sensitivity

Sources:

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