

# Okanagan Kootenay



## Cherry Growers Association

MARCH 2006 Edition

The newsletter – and more - is now available on the OKCGA website [www.bccherry.com](http://www.bccherry.com)

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### Note from the President

It was good to get together with everyone for the AGM on February 7<sup>th</sup> and we hope the change in timing worked out well for most of you. Thank you to everyone who made presentations and helped with the Research Review meeting on February 6<sup>th</sup> and AGM, especially Frank Kappel and everyone at PARC! The sessions were extremely interesting and well worthwhile.



For those of you who missed it, during the business meeting, at the AGM the “Dr. Lapins” award for achievement was presented to Dr. Dave Lane in recognition of his remarkable contribution to the PARC cherry breeding program. A presentation of our appreciation was made to our retiring President, Greg Norton, who unfortunately felt he needed a break from the OKCGA presidency to tackle other tasks in the community. Retiring OKCGA Director Helmut Arndt



was also recognized and thanked for his years of volunteer service as a director since he helped found the OKCGA back in 1998.

And also very important, a big “THANK YOU” goes to all of you progressive-minded growers who contributed the levies that make our research possible. Despite 2005 being a difficult year, your financial contributions will enable at least as much research as the previous year. It is never enough, but it is a great deal more than any of us could do on our own. *(By the way, it is never too late to get your OKCGA membership or submit your 2005 levy. The membership form can be printed off the website if you have lost yours.)*

Last year’s research reports are now available on the website. The research program for 2006 was decided before the AGM, and plans for the season are underway. Unfortunately the proposed partner funding for the Pesticide Project for Duane Holder has not come through, so if alternative partner funding cannot be found, this project will have to be scaled down or dropped. This project had some timely components in view of changing spray programs for Cherry Fruit Fly.

While thinking of fruit fly, we are extremely disappointed that GF-120 registration is not yet complete. As of the date of writing this, we understand from DOW that, although all toxicology work and efficacy data is satisfactory to PMRA, the last stage of issuing a Pest Control Number for the label has yet to be done and if this is not very soon, the product will not be available in time for use on cherries in Canada this season. It seems strange that when a product such as GF-120 comes along - that so significantly reduces the quantity and risk of a pesticide, that the regulatory body that is working so hard to reduce the risks and improve the safety of chemicals, is unable to process the registration, get the product in use, and reduce the use of higher risk chemicals as soon as possible. Needless to say, the executive continues to work actively on this matter.

In the last month I have noticed two articles in newspapers inferring that seasonal labour in Okanagan orchards is minimum wage work, and if orchardists paid decent wages and the work conditions were better, there would be no labour shortages, nor need to consider non-Canadians for seasonal work. We know it is not that simple. I don't know of any orchard labour at minimum wage, and piecework earnings are generally yielding a very high average wage in cherries. Regardless, the image is out there, and we need find ways not just to set the record straight, but to change that image so more people (particularly local) realize that there are good job opportunities and experiences to be found working in cherry orchards. And I guess we always need to try to be better employers and help others see the benefits of this. Word gets around quickly in this small little world and it takes a lot to improve a bad image, but not much to wreck a good one.

This newsletter is a little late, but the quantity and quality we hope will compensate for the delay. Watson's Wisdom, below, gives us something to think about as the pruning progresses. Judy Funnell is contributing financial advice from Grant Thornton, Mike Beulah has done a wonderful job to bring us up to date on some of the recent research and literature from across the line, Frank Kappel has offered to contribute articles and advice now he has a bit more time, and PARC have some new varieties available for testing through PICO.

Best wishes to all for a good spring bloom; another season is fast upon us.

Christine Dendy

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## Pruning the Modern Cherry Planting

by Tim Watson, Terralink Horticulture

The production of quality fruit is essential to profitable sweet cherry production. Training systems and pruning methods have been modified in recent years to improve early yields, efficiency of production systems and quality fruit.

Although there still some use of an open centre upright leader training system for low density plantings, but with smaller and lower trees than in older plantings. Some type of a smaller central leader tree is the most common training system for moderate and high density cherry plantings. Spindle, "Vogel" and "Zahn" systems and variations and adaptations of these central leader systems are used. The use of dwarfing rootstocks for cherries is becoming more common. Some cherry growers in our area have had success with dwarfing rootstocks for high density plantings.

With these training systems, trees can be producing fruit three or four years and reach full production as early as six or seven years. Because trees are closely spaced and can become shaded quickly, it is important to employ pruning and training techniques that will maintain high quality fruit. One of the most important factors affecting fruit quality is pruning. Crop load as affected pruning increases fruit size, soluble solids and reduces bruising. The spurs of cherries are different from other types of soft fruit by their long life. With cherries, spurs will continue to produce fruit for ten years or more, but produce fewer flower buds and poorer quality fruit as they age. Old spurs produce poor quality fruit. The largest and best quality fruit is produced at the base of one year old shoots and one to three year old spurs. The objective is to maximize one year old shoots and young spurs throughout the tree.

With smaller trees and the production systems employed at present training consists mainly of branch selection, branch positioning and some shoot removal. Heavy pruning should not be required. After approximately the first four years upper limbs begin to shade out lower limbs and fruit quality begins to decline. Trees then require pruning to maintain canopy vigour and productivity. One of the most important factors affecting fruit quality at this stage is pruning. Moderate pruning that promotes development of 25-30cm shoots is desirable to maximize fruit quality. Branches that are less than 90cm and directly above another branch should be removed. Remove or shorten branches to allow light to penetrate into the centre of the tree. Cuts into older wood will stiffen branches; remove pendant wood and some older spurs. Branch renewal can be accomplished by stubbing older heavier branches or cutting laterals back to two or three buds. Don't delay the renewal process until fruit quality suffers. Branch renewal and spur renewal must begin early in the life of today's cherry plantings to maintain production of high quality fruit. If the renewal process is not started early enough trees overfill their space and light distribution in the tree suffers. Heavy pruning is then required and excessive vigour and high quality fruiting results, delaying the time required to regain a good balance of vegetative growth

wood. In addition to dormant pruning, most systems in use today also make major use of pruning and training during the growing season.

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## **Estate and Succession Planning**

By Judy Funnell, C.G.A, Manager, Grant Thornton LLP

Thank you to OKCGA for the invitation to Grant Thornton to participate in the seminar sessions held in December 2005. Part of this seminar dealt with Family Farm Estate and Succession Planning.

One of the most important procedures that an agriculture producer can do is to have a detailed plan for the eventual succession or sale of the farming assets. The more time that you allow for planning before the sale or succession, the better your tax advisor will be able to provide you with the best plan that will meet the needs of you and your family and create the least amount of income taxes.

Although the income from farming can be uncertain, the value of the farm assets may be steadily increasing. It should be part of every farm plan to protect these assets and minimize the tax on the future sale or succession. Part of this plan should include the utilization of the enhanced capital gain exemption.

### **The Enhanced Capital Gain Exemption (ECGE)**

Every individual residing in Canada is eligible for a lifetime exemption of \$500,000 on capital gains from the disposition of qualified farm property.

Qualified farm property must meet all the various rules of the Income Tax Act. Qualified farm property is usually farm property used in an active farming business that is:

- Real Property (land and buildings)
- An interest in a Family Farm Partnership
- A share in the capital stock of a Family Farm Corporation

Qualified farm property may also have to meet the Gross Revenue Test (Gross Revenue from farming exceeds Net Revenue from all other sources) and the Principal Use Test (must be actively engaged in the farming business on a regular and continuous basis greater than 50% of the time)

The enhanced capital gain exemption is reduced by any capital gains or capital gain elections claimed on or before February 22, 1994. Also, the availability to use the ECGE can be reduced or eliminated by previous use of the capital gains exemption, allowable business loss claims, capital loss claims and the taxpayers CNIL account (when cumulative net investment expenses exceed cumulative net investment income since 1988). Taxpayers must also be aware that the use of the ECGE in any year may trigger the Old Age Security clawback, can reduce or eliminate the Child Tax Benefit and or the Senior Benefit and can create Alternative Minimum Tax. However, good tax planning can often minimize some of these effects.

As stated earlier, the ECGE is available to every individual residing in Canada. Therefore, with good advanced tax planning, there are often opportunities to allow for each direct family member to utilize this exemption (spouses, children and grandchildren).

Often, farm assets may not qualify because they do not meet the Gross Revenue Test or the Principal Use Test, or due to their nature they are specifically excluded by the Income Tax Act. Advance tax planning will often allow your tax advisor to purify the assets or even change the nature of the assets such that they meet the restrictions of the Income Tax Act.

Most qualifying farm land and equipment may be transferred tax free to a child or spouse if the transfer occurs within 36 months of death. Good income tax planning dictates that if the ECGE is available, the executor should elect to realize this gain. You should review your will and succession plans with your tax advisor to ensure that income tax planning is optimized. These issues will be dealt with in future newsletter articles.

The preceding is a summary of the capital gain exemption rules. The Income Tax Act has very detailed and onerous rules that must be followed to properly utilize the enhanced capital gain exemption. Please consult a qualified tax advisor who can tailor your plan to meet your needs.

### **A reminder about the new CAIS Program**

For the 2003 and 2004 production year, all CAIS participants (individuals and corporations) filed two information returns with CAIS:

Statement A – Statement of Farming Income by June 15 for individuals or June 30 for Corporations

Supplementary Information form – originally due by September 30 for all entities.

Commencing for the 2005 production year, both these form will be filed with your income tax returns. To assist with the preparation of your income tax returns, please provide your accountant with the relevant information needed to complete the supplementary information form. This would include the number of acres you own, including the producing acres and the number of pounds of the various fruits produced. Also if you file your tax return on a cash basis, you will need to include any inventory, accounts receivable and accounts payable outstanding at your year end.

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## Communications from OKCGA

OKCGA communications now make extensive use of the website and email to cut postage costs, so please make sure we have your current mailing address and email address by calling Susan at (250) 763-9790 or e-mail [admin@bccherry.com](mailto:admin@bccherry.com). The website is periodically updated with a members' area to access recently posted research reports, alerts and information on horticulture, pesticide registrations, export issues, and other orchard matters. If members have not received an email with further information on how to use this feature, please contact Susan. Recent newsletters are now available on-line at [www.bccherry.com](http://www.bccherry.com) and previous newsletters will be available soon.

A complete list of the OKCGA Directors and their contact information is available on the website. Please feel free to get in touch with us if you have concerns or ideas we need to think about. Please send contributions to the newsletter to Michael Beulah [mpbeluah@telus.net](mailto:mpbeluah@telus.net). We are also looking for interesting cherry and orchard photographs to update the website. If you have something, please send it to [christine@dendy.ca](mailto:christine@dendy.ca).



## A Review of recent published Cherry Research

By Michael Beulah

### To thin or not to thin?

At the recent Cherry institute meeting in Yakima on January 13<sup>th</sup>, 2006 one of the talks was on cherry crop load management. Mel Omeg a grower from Oregon reviewed some returns for 3 different growers who had 10, 8 and 7 tons to the acres. With the 10 tons to the acre the grower peaked on 11 row and had no 9 ½ row. 8 tons to the acre the grower had 10% 9 ½ row and better. The grower with 7 tons to the acre had 40% 9 ½ and better. The growers actually returned the about the same sale value per acre, however the grower with 7 tons to the acre had lower picking and packing charges and netted more money per acre. Another benefit was having fewer people to manage, fewer ladders and pails.

2 papers have come out recently that took different approaches to crop load adjustment

### Comparing Novel Sweet Cherry Crop Load Management Strategies

By Matthew Whiting and David Ophardt

HortScience 40(5): 1271-1275.2005

This paper compares control trees to manual removal of 50% of bloom or 50% spur removal. The work was on 8 year old Bing cherries trees planted on Gisela 5 and Gisela 6 in 2002. Blossom thinning reduced the yield by 22% on Gisela 5 and 31 % on Gisela 6 and it increased cherry fruit weight by 26% on Gisela 5 and 20% on Gisela 6. Spur thinning resulted in a bigger reduction in yield 42% on Gisela 5 and 40% on Gisela 6. On Gisela 5 this reduction in yield resulted in fruit 15 % larger than the control. On Gisela 6 there was

no size increase. Other than effects on fruit weight other quality parameters remained the same.

The carryover effects of these treatments were evaluated also in 2003 the year following the thinning treatments. Basically the yield recovered on both blossom thinned and spur thinned trees however there was no effect on average fruit weight. Trees that were spur thinned however had a bigger percentage of premium fruit (>25.5mm). This was a significant effect on Gisela 6 but not on Gisela 5.

Overall the blossom thinning treatment seemed more effective and this was probably due to maintaining a better fruit to leaf ratio in the trees. From the data presented in this paper Gisela 6 out yielded and had better fruit size distribution than Gisela 5.

### **Chemical Blossom Thinners vary in their effect on Sweet Cherry fruitset, Yield, Fruit quality and Crop Value**

Matthew Whiting, David Ophardt and James Mcferson  
HortTechnology – January-March 2006 16(1)

As you can figure out from the last paper there would be a lot of labour cost involved in blossom or spur thinning. In this paper they try to achieve those results with spray applications.

This paper also reports on results from 2002 and 2003. The trees used were 8/ 9 year old Bing on Gisela 5. The chemical treatments applied were 2% ATS( ammonium thiosulphate), 3%-4% VOE (vegetable oil emulsion) and tank mix of 2% fish oil + 2.5% lime sulphur(FOLS). These treatments were applied at 10% full bloom and again at 80%. The fruitset of the Control was 30% of available flowers. In 2002 ATS reduced fruitset compared to the control by 80% and FOLS and VOE reduced fruitset 60% of control. In 2003 ATS and FOLS reduced fruitset by 33% compared to the control and VOE was ineffective.

As a result in 2002 the yield was decreased by 60%, 50% and 30% for ATS, FOLS and VOE, respectively. And at the same time the fruit size was increased by 41%, 33% and 30% for ATS, FOLS and VOE, respectively. In 2003 the 33% reduction in fruitset by ATS and FOLS resulted in the same yield as the control because of the slight increase in fruits size. For fruit size distribution in 2002 the control tree had 5% premium fruit (>26.5mm) compared to 51%, 37% and 31% for ATS, FOLS and VOE, respectively. In 2003 the control trees were 32% lower yielding than in 2002 and therefore they produced 51% premium fruit and this was only improved to 60% by ATS and FOLS.

As it worked out the crop value for the control trees in 2002 was the highest even though the market price per pound was lower. In 2003 the ATS and FOLS crop value per tree was higher because yield was the same but there was a higher percentage of premium fruit. VOE was inconsistent and fruit quality was reduced.

To thin or not to thin? Thinning results can differ with rootstock, chemical used and the year. There are probably varietal effects also. At a cherry field day at Prosser, Washington last June Matt Whiting said there have been some positive results from fruit thinning in June when you see what the crop is like. And there are growers in Canada who have taken this approach. Also check the March 15<sup>th</sup> Good Fruit Grower they presented some more of the results from the Cherry Institute meeting in January.

Postharvest cherry quality – we are supporting some research this year looking at improving storage quality of our fruit although we hope we don't need to face that situation in the future. The following paper seems interesting but it all adds to the amount of work we do for packing cherries.

### **Postharvest sweet cherry quality and safety maintenance by Aloe Vera treatment: A new edible coating**

D. Martinez-Romero, N. Albuquerque, J.M. Valverde et al.  
Postharvest Biology and Technology 39(2006) 93-100

This work was done in Spain involving StarKing cherry fruit that was dipped in Aloe Vera diluted (1:3) with water for five minutes. They were air dried then stored at 1 C and 95% RH for 2, 6,9,13 and 16 days. Half were analysed right away the other half was evaluated after 1 day at 20 C.

A.vera retarded moisture loss and reduced respiration rates. After 16 days at 1 C the control fruit lost 6.2% fresh weight compared to the treated fruit losing 3.8%. A. vera

treated fruit maintained the same firmness over the storage test while control fruit decreased from 1.38N/mm to 1.02 N/mm. This also applied the stem removal force which remained constant in treated fruit but decreased from 5.5 N to 2.7 N at the end of storage in the control fruit. Visual scoring for stem greenness showed that the A. Vera stems stayed greener. Judges didn't perceive any development of off-flavours in sweet cherries due to the Aloe treatment.

Aloe vera also is reported to have antimicrobial activity. At harvest the fruit had 3.6 and 1.8 log CFU/g for mesophilic aerobic and yeast and mold respectively. After 16 days of cold storage plus 1 day of 20 C the control fruit had 4.7 and 3.1 log CFU/g for mesophilic aerobic and yeast and mold respectively. Whereas the A. vera treated fruit had 2.0 and 1.2 log CFU/g for mesophilic aerobic and yeast and mold respectively after storage.

### **Anthocyanins and hydroxycinnamic acids of Lambert Compact cherries after cold storage and 1-methylcyclopropene treatment**

Branka Mozetic, Marjan Simcic and Polonca Trebse

Food Chemistry 97(2006) 302-309

Anthocyanins and hydroxycinnamic acids are some of the major Polyphenols found in cherries. They are known for their positive effects on human health by their antioxidant activity that helps prevent coronary diseases and cancer. The plant growth regulator 1-methylcyclopropene (1-MCP) blocks the effect of ethylene in promoting fruit maturation and has had positive effects for apple storage.

The lamberts(77 fruit about 500 grams) were treated with 0,180 or 360 ppb 1-MCP for 2 hours at 25 C in 2.5 Liter jars. After the treatment the jars were stored at normal atmosphere at 2 C for 12 days.

The positive result of the experiment was the highest concentration of 1-MCP resulted in less rot 6% compared to 14% for the control. However 1-MCP had no significant effects on total anthocyanins which didn't change during storage. 1-MCP had no influencing effect on polyphenol metabolism during storage, the levels didn't change. The 1-MCP also did not delay stem browning.

Need something to do with cull cherries? This idea comes from close to home. It's work that was done by Dr Peter Toivonen at PARC in Summerland.

### **Factors affecting the quality of a novel fresh-cut sweet cherry product**

P.M.A. Toivonen, F. Kappel, S. Stan, D-L. McKenzie, R. Hocking

Food Science and Technology 39(2006) 240-246

This work was to evaluate if sweet cherries could made an acceptable fresh cut product. A product similar to pitted olives which could be stuffed with various food stuffs. The idea was to use some of the culls where the ring splits and nose splits would be cut out and the rest of the cherry looks acceptable.

There was one experiment looking at cultivar differences and the effect of storage before cutting. The cultivars in this trial were Bing, Cristalina, Lapins, Samba, Sandra Rose, Sonata, Staccato, Sweetheart and Symphony. The fruit was harvested, then halve was pitted right away. The other halve was stored for 1 week at 1 C then pitted. All fruit was stored for 21 days at 1 C., before the fruit was evaluated for weight loss, fruit firmness, browning at the cut, % decay and % shoulder collapse.

In another experiment GA treated fruit was also tested (on Bing, Lapins, Sandra Rose and Skeena). This paper also looks at the design of the cutting tube, as well as the effect of fruit temperature at the time of pitting.

In the variety trial there were quite big differences between the varieties. Almost all the varieties retained their firmness after 21 days except for Bings, Sandra Rose and Symphony. Bleeding at the time of pitting was worst in Samba and Sandra Rose and least in Sonata. Browning at the cut was highest (above 85% of fruit) for Sonata and Symphony. Pitting the cherries after one week storage lead to more severe browning at the cut in all varieties except SweetHeart. Delaying the pitting also increased the % of fruit with collapsed shoulders in all varieties. However this is thought to be the effect of pitting the fruit at cold temperature right out of storage.

The GA field application treatment didn't improve the storage results on the varieties that were tested. GA treated fruit were firmer however they suffered from more post-cutting bleed. GA also reduced the percentage of shoulder collapse in Bing and Sandra Rose.

A scalloped-edge cutting tube reduced the amount of force required to make the first penetrating cut from 8.3 N to 4.2 N. This also increased fruit firmness retention and reduced shoulder collapse incidence.

### **Effect of Fungicide treatments and Sanitation Practices on Brown Rot Blossom Blight Incidence, Phytotoxicity and Yield for Organic Sour Cherry Production.**

I.Holb and G. Schnabel

Plant Disease / vol 89 no.11 pages 1164 – 1170

This work was done in Hungary. It compares conventional fungicides (vinclozoline and penconazol) to the copper based products, elemental sulphur fungicides and sanitation (collecting mummies and blighted twigs from the orchard to reduce disease pressure). The trial was conducted in 2003 and 2004. The conventional fungicides were applied twice. Once at closed bloom and again at full bloom. Copper hydroxide, Wettable sulphur, micronized wettable sulphur, lime sulphur and lime sulphur + micronized wettable sulphur were applied at closed bloom, full bloom and petal fall.

None of the inorganic fungicides were as effective as the conventional fungicide treatments: however copper hydroxide and lime sulphur in combination with sanitation reduced blossom blight when applied 2 or 3 times at blossom. These treatments caused some phytotoxicity, however they significantly increased crop yield when there was severe brown rot infections in the untreated control. Lime sulphur has a curative effect on brown rot; it could be applied 20 to 35 hours after infection. Copper products are reported only to be protective. This study showed that wettable sulphur could not control blossom blight effectively when disease pressure was high. Micronized wettable sulphur didn't improve these results. And adding it to lime sulphur was no advantage. Sanitation itself reduced blight significantly in the wettest year (high disease pressure).

### **Cyclanilide induces lateral branching in sweet cherry trees**

Elfvig, D. and Visser, D.

Hortscience v 41 issue 1 pages 149-153 (2006)

Cyclanilide, a new bioregulator was compared to promalin for inducing branches on cherries in the nursery and in orchard conditions. In the nursery it was as effective as or better than Promalin. There was no synergistic effect in a tank mix of the two growth regulators. The branches produced were the same angle as would normally develop and they were significant enough to be a feather tree.

Other Papers that maybe of interest to some people:

### **Characterization of Microcracks in the cuticle of the developing Sweet Cherry Fruit**

Stefanie Peschel and Moritz Knoche

J. Amer.Soc. Hort Sci 130(4):487-495.2005

This paper examines the development of microcracks in various regions of the cherry fruit during the fast stage of growth. These become the weak areas where water is absorbed under rainy conditions that may cause splitting.

### **Effects of rootstocks and training system on growth, precocity and productivity of sweet cherry**

V. Usenik, N. Fajt and F. Stampar

Journal of Hort. Sci and Biotechnology (2006) 81 (1) 153-157

This study looked at Lapins on F 12/1, Maxma 14, Weiroot 13, Piku 1, Gisela 195/20, Weiroot 158, Gisela 5, Edabriz and Wieroot 72 planted in Bilje, Slovenia in 1997. Gisela 4 was also planted but there was 100 % mortality. Total canopy volume by 2004 was 14 m<sup>3</sup> for F 12/1 and the other rootstocks as a % of F 12/1 were 91, 99, 84, 61, 66, 36, and 50 for Maxma 14, Weiroot 13, Piku 1, Gisela 195/20, Weiroot 158, Gisela 5, Edabriz and Wieroot 72 respectively. Total yield from 2000-2004 for F12/1 was 2.2 kg/m<sup>3</sup> and using F 12/1 as 100% the other rootstocks yielded 196, 218, 305, 277, 246, 268, 368 and 300% more fruit per cubic meter for Maxma 14, Weiroot 13, Piku 1, Gisela 195/20, Weiroot 158, Gisela 5, Edabriz and Wieroot 72 respectively. There was no data on fruit size.

They conclude that there was a significant increase in yield efficiency for Gisela % compared to F 12/1 and Maxma.



## Rootstocks for Sweet Cherries in British Columbia

by Dr. Frank Kappel, PARC

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 Gisela<sup>7</sup> 5 (G5), Gisela<sup>7</sup> 6, Gisela<sup>7</sup> 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](http://extension.oregonstate.edu/wasco/horticulture/Rootstocks/ai_rootstocks.html)

Cherry Rootstock Information

## 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
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	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 vigourous	very vigourous; 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

Characteristic	F12/1 (mazzard)	mazzard (seedling)	P. mahaleb	Colt	Gisela® 5	Gisela® 6	Gisela® 12	W158	Tabel® Edabriz
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
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:

Callesen, O. 1998. Recent developments in cherry rootstock research. *Acta Horticulturae* 468:219-228.

Edin, M., J. Lichou, R. Saunier. 1997. *Cerise, les variétés et leur conduite*. Ctifl, Paris, France.

Perry, R.L. 1987. Cherry Rootstocks. In: R.C. Rom and R.F. Carlson (eds.) *Rootstocks for fruit crops*. Wiley-Interscience, New York.

Webster, A.D. and H. Schmidt. 1996. Rootstocks for sweet and sour cherries. In: A.D. Webster and N.E. Looney (eds.) *Cherries: crop physiology, production and uses*. CAB International. Wallingford, UK.



## New PARC Sweet Cherry Selections Available from PICO for Testing

The following new selections are now available for limited testing from PICO. Testing is to allow field trials of new material to observe the characteristics in commercial production environment and market testing. Participating growers will be expected to monitor the growth and production to provide feedback to PICO and PARC for evaluation of whether the varieties should be released. Interested growers are invited to contact Ken Haddrell at PICO at (250) 494 -8959 or email [ken.haddrell@okplant.com](mailto:ken.haddrell@okplant.com) to make arrangements for trials.

### PARC SELECTIONS AVAILAIBLE FOR TEST FROM PICO

SPC Code	Parentage	Pick Date	AFW	Cracking	FTech1	FTech2	TSSC	TA	Colour
SPC226	Stella OP	23-Jul	11.97	24.50	222.72	268.40	18.60	19.05	DARK
SPC221	2C-61-18 x 13S-18-15	10-Jul	11.83	18.00	197.00	.	19.50	12.02	DARK
SPC240	Lapins x 13S-18-15	3-Jul	8.95	23.82	215.75	275.85	18.71	9.52	DARK
SPC342	Lapins x 13S-34-50	2-Jul	11.06	23.33	242.71	347.30	20.43	8.89	DARK
SPC263	2S-25-11 x Newstar	26-Jul	10.98	28.00	236.20	303.00	22.84	12.76	DARK
SPC188	Sam x Irradiated Salmo	5-Jul	10.41	31.40	277.56	332.15	17.97	11.90	DARK
SPC189	Lapins x 2N-39-05	20-Jul	13.78	37.71	217.63	248.40	18.77	15.89	DARK
SPC208	unknown	19-Jul	12.35	36.20	231.40	369.00	19.78	9.44	DARK
SPC210	unknown	24-Jul	10.87	24.17	265.49	273.65	19.87	13.96	DARK
SPC118	Stella x Summit	28-Jul	14.38	26.50	.	194.95	22.05	13.20	DARK
SPC171	2N-60-07 x 2N-38-32	22-Jul	10.81	24.42	291.01	410.70	16.55	14.02	DARK
SPC378	Sunburst x 13S-30-21	12-Jul	13.09	46.00	272.13	305.40	20.03	10.60	DARK
SPC175	Comp. Lambert x Lapins	17-Jul	13.45	51.50	202.88	311.00	17.96	24.47	DARK
SPC335	Compact Lambert x Lapins	20-Jul	11.13	14.67	339.28	456.05	20.06	12.78	DARK
SPC381	Lapins x Sonnet	27-Jun	12.89	29.33	250.37	249.00	17.37	9.52	BLUSH

#### Definitions

<b>Pick Date</b>	Van is picked about July 5th to 8th at PARC, Sweetheart about 19 days later. No GA
<b>AFW</b>	Average Fruit Weight in Grams      10 grams is about 10 row. Sweetheart averages 9.9 grams at PARC
<b>Cracking</b>	Rain induced splitting in field
<b>Ftech</b>	Michigan Firm Tech pressure tester. Non-destructive pressure tester      No GA The higher the number the firmer the fruit
<b>TSSC</b>	Total Soluble Solid Concentration. Measure of Sweetness
<b>TA</b>	Titralbe acids Measure of sourness

### PICO New Variety Testing and Evaluation Program Guidelines:

Before applying to test a new variety please remember:

- 1) Not all varieties are going to make the grade and become commercial varieties nor become "the next Ambrosia or Staccato".
- 2) A commitment is required to give the variety a chance to settle out as a variety. Evaluation is a long term process and young trees often respond differently than mature trees.
- 3) Record keeping is required including:
  - Mapping of plantings
  - Evaluation of trees at planting
  - Evaluation of site, soil type, or other contributing factors.

- Records of pre-planting work (fumigation, cover crops etc.)
  - Soil amendments (fertigation, lime, etc.)
  - Crop records
  - Maintenance programs (Pruning style, thinning method, spraying etc.). Test varieties should be maintained as other established commercial varieties unless known maintenance issues need to be addressed.
  - Tree style to see if the variety is an easy or difficult tree to grow.
- 4) Some the material for testing is not certified virus free.
- 5) The signing of a non-propagation and non distribution agreement is required. Test varieties and the propagative material are the property of the breeder and may not be distributed nor be bulked up by the tester with out the consent of variety owner or the owners representative.
- 6) Test varieties are just that, for test. There are no guarantees that the variety will ever become a commercial success. Do not plant a test variety hoping to make your fortune on it.
- DO NOT PLANT WHAT YOU CANNOT AFFORD TO LOSE.**
- 7) PICO requires reasonable access, by appointment, to the test variety for evaluation.
- 8) All information is the property of the variety owner and PICO. Collection and disbursement of the information will be done by PICO. Only when information is collated can an accurate assessment of the variety be done.
- 9) Naming of the variety is the responsibility of the variety owner. Naming of a variety by the grower, for any reason, is not acceptable. It can jeopardize the opportunity for the owners to obtain Plant Breeders' Rights or Plant Patents.

PICO welcomes inquiries and participation in the evaluation program. Without test growers varietal development becomes a much longer process. Without the feedback from testers the evaluation program does not work. We believe there are different levels of testing and we need people who are willing to plant new varieties in numbers of 10, 20, 50, 100, and 200 trees. When a variety is extremely new a planting of 200 trees (or more) is not only unjustified it may not be in the best interest of the tester or the program. Another factor in the planting test of varieties in high numbers is the availability of propagation material. Since the variety is new there is often only a small amount of propagative material available, in most cases less than 1000 buds. PICO will make trees of new trial varieties available to growers who are interested in the test program. Since these varieties are new the number of trees will be limited.

As the evaluation of the varieties continues test plantings may be increased or disposed of as each case warrants. Planting more than 1 acre of any test variety is not recommended as there is more to lose than to gain.

With the realization that growers and packing houses need a quantity of fruit to make any kind of assessment of the commercial quality, efforts may be made to channel fruit to one packing house to create enough volume to justify "running" the product over the line. Market testing of the varieties will be done in agreement between PICO, packing houses and B.C. Tree Fruits.

## **Acquiring Test Material**

Contact PICO (Phone (250) 494-8959) to place an order for propagative material.

### **Okanagan Plant Improvement Company Limited**

4200 Highway 97, (PO Box 6000), Summerland, BC V0H1Z0

The order requires:

- Name and address and other contact information of grower
- Location of the test site
- Number of trees to be made
- Type of propagation (Bench Graft, Top working graft, T-Bud, Chip Bud)
- When the material is required (summer, winter) and date of shipping
- The grower designates a propagator. (PICO prefers the grower designate a propagator known to the Company. The propagator should be from Canada and, for BC growers, from BC. The grower may be the propagator). The propagator may be required to sign a propagation agreement.

The release of test material requires the grower/tester to sign and have witnessed a TEST AGREEMENT.