Sweet Cherry Production in Eastern Europe

Lynn E. Long, Extension Horticulturist
Oregon State University, Wasco County Extension

Traveling through Eastern Europe in 1995 was a different experience from my 1994 trip to the west. The German autobahn was replaced in Poland with a two-lane road. Slow moving trucks belched a putrid black smoke at me every time I tried to pass. Heavy traffic had dug deep channels into the pavement that made crossing lanes similar to a roller coaster ride. The modern cars of the western European farmer were now horse drawn carts filled with sugar beets.

The contrast between east and west was no less obvious when it came to horticulture. The high density orchards of western Europe, with innovative training systems grown on dwarf rootstocks rapidly gave way to 40 foot trees that had never seen a pruning saw. Instead of $10 to $11 per hour wages, which were commonly paid in the west, pickers in the Czech Republic average only $1.00.

The hope of learning new horticultural techniques was obviously not the drawing card that brought me to this part of the world. In actuality, it was the opportunity to visit with plant breeders and scientists who have been working on sweet cherries for the past 45 years behind the Iron Curtain. The communist governments of East Germany, Czechoslovakia and Hungary spent hundreds of thousands of dollars in sweet cherry research to support relatively small industries. It was my desire to bring back some of this information to Northwest growers.

In each of the four countries of Eastern Europe that I visited I was able to learn valuable information about sweet cherries with potential benefit to the Northwest industry. Some of the most interesting information with greatest potential is summarized below.

Former East Germany

Sweet cherry orchards in eastern Germany took a step backward following unification. Growers here soon learned that the quality of their cherries could not compete with those produced in the west. No longer did they have a ready market for their fruit no matter the quality. Orchards were taken out and are just beginning to be replanted. Prior to unification, cherry orchards were not pruned, but those still in the business are learning better management techniques.

One of the casualties of unification were 10 year old commercial cherry orchards grown on a dwarfing rootstock named Pi-KU developed at the Dresden-Pillnitz research station. These orchards were removed for economic reasons shortly after unification. Although potentially valuable information was lost, plant breeder, Dr. Bridgette Wolfram has been testing these rootstocks for years and continues to obtain information from test plots at the research station. Her data indicate that these rootstocks will dwarf the tree yet potentially maintain fruit size, a quality factor that other dwarf rootstocks have failed to achieve.

ROOTSTOCK TRIAL WITH VAN, 1995

Rootstock	Yield (Kg./tree)	Fruit Weight (g)	Trunk Diameter (cm^2)
Pi-KU 4.13	11.0	7.8	11.6
Pi-KU 4.15	10.6	8.3	11.6
Pi-KU 1.24	10.3	8.8	11.2
Mazzard	11.0	7.8	15.9

These data are from only 3 Pi-KU rootstocks. There are other selections that also show promise.

While in Pillnitz I also saw a Russian rootstock called Cerasusx cerapaduss-3-II that provided good tree and fruit size with a compact growth habit and wide branch angles. This rootstock would also be worth looking at more closely.

Poland and the Czech Republic

From eastern Germany I traveled to Poland to look at a series of Czech rootstocks that Polish scientists have tested extensively. The propagation rights to these rootstocks are owned by a Polish nursery. Scientists in the Czech Republic have also tested these rootstocks, I have therefore combined their reports into this section.

P-HL ROOTSTOCK TRIAL, POLAND
with variety Burlat

Rootstock	Yield (lbs.) Year 5	Fruit Wt. (g) w/o irrigation Av. 1991-93	Trunk Dia. Year 6 (cm^2)
P-HL-6	19.8	6.36	49
P-HL-84	27.5	6.41	72.3
Mazzard	7.0	7.04	152.5
F/12/1	7.7	6.86	129.9
Colt	6.6	--	--

P-HL ROOTSTOCK TRIAL, CZECH REP.

with variety as indicated in parentheses

Rootstock	Yield (lbs.) 1979-1985 (Techlovicka)	Fruit Wt. (g) w/o irrigation	Crown Volume Yr. 15 (m^3) (Techlovicka)
P-HL-6	162	5.16 (Karesova)	18.7
P-HL-84	132	6.44 (Kordia)	22.8
P-HL-224	175		35.3
F 12/1	176		59.5
Colt		5.09 (Karesova)	
Colt		6.48 (Kordia)	

The smaller fruit size seen in Poland with P-HL-6 and 84 when compared with the control is not evident in the Czech Republic with the varieties Karesova and Kordia. This is encouraging evidence but all of these rootstocks need to be tested in the Northwest with Bing before we get too excited about the possibilities.

Promising Czech Varieties It is possible that the fruit size of the following cherries may be improved by tree pruning, irrigation and gibberellic acid (G.A.) application. For example, Kordia is said to average 7.8 g. in tests conducted in the Czech Republic, while a Wenatchee, Washington grower reported a 9 gram (9 1/2 to 10 1/2 row) Kordia.

Kordia

This cherry is available in the U.S. as Attica. It is a popular cherry in eastern and western Europe and has a good reputation as an export cherry that can stand up to transport. In the Czech Republic, the average size of this cherry is 7.8 g. I recently had an opportunity to visit with a Wenatchee, Washington grower who has several acres of this cherry. He claims that under his conditions it is as large or larger than Bing and much firmer. In fact a pressure test which he conducted with a W.S.U. testing machine showed firmness readings of 1045 to 1245 with Kordia without G.A. while Bing, with G.A., received 913. It must, however, be noted that all of these cherries were damaged to some extent by rain. Kordia is harvested about 10 days after Bing and is considerably less susceptible to cracking. Last year his Bings were 40% cracked while only 10% of his Kordia were split. These Kordia were shipped by boat to Hong Kong and received $1.19 per pound.

Techlovan

According to Czech scientists Techlovan is larger than Kordia with similar firmness. Their data indicate a cherry averaging 8.0 g. without pruning, irrigation or G.A. Ripening time is probably a few days after Bing. The fruit is dark red with medium length stems. This cherry is said to have very good flavor with an acid-sweet taste. There is moderate sensitivity to cracking when ripe.

Hungary

Margit
This is an early cherry, ripening 10 to 12 days earlier than Van. The fruit is very large averaging 9 to 10 row. The cherry is said to be firm with a very flavorful acidic-sweet taste. Van serves as a good pollenizer for this cherry.

Linda
Perhaps the most damaging characteristic of this cherry is the fact that it ripens with Bing and would have to compete with it on the market. Beyond this, however, it looks like a good cherry. It too averages 9 to 10 rows and is said to be firm, yet resistant to cracking. Hungarian evaluators claim that it has a "delicious, sweet-acid" taste with a deep mahogany skin. This is a late blooming variety, heavy yielding, but easy to harvest due to long stems. Excellent for fresh production as well as canning and freezing.

Katalin
Ripens 7 to 8 days after Bing with large 9 1/2 to 10 row cherries. Skin color is red to mahogany with a pleasant, sweet-acid taste. Resistant to cracking with good firmness, however, slightly softer than Linda or Margit. Stems are very long, facilitating easy harvest of consistently heavy crops. Excellent for fresh production as well as canning and freezing.

Kavics
The english translation of Kavics is "stone" which closely describes its most important trait. This is the firmest of all the Hungarian cherries, said to bounce if it's dropped. This cherry averages 11 rows but should do better with irrigation and consistent pruning. The skin color is mahogany to black with an aromatic sweet flavor. Kavics can be easily harvested by machine since the small stem separates from the fruit without bleeding. Chemicals are not needed due to a natural abscission layer. A highly productive variety.

Summary
Although sweet cherry production in eastern Europe lags far behind that of the west we can still benefit from their research and breeding programs. As stated earlier the east Europeans have spent 40 years and hundreds of thousands of dollars developing new rootstocks and varieties. We need to bring this plant material to Oregon to test it under our conditions. I hope to be able to begin that process soon.