



Figure 1. Dr. Artem Sorokin with Blue Honeysuckle plants he found.

A Visitor from Russia

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Dr. Artem Sorokin of the Vavilov Institute, Russia visited me for a month starting in Mid August of 2008. The Vavilov Institute is the worlds' largest genebank and Dr. Sorokin is the head of the Fruit Division of the genebank. His special interest lies in "Underutilized Fruit Crops" which includes Blue Honeysuckles, Seabuckthorn and High Bush Cranberries. I obtained a 'Partnerships for tomorrow Phase II' grant from the association of Universities and Colleges of Canada that paid for his visit.

The following are excerpts from the grant write up for the PTPII program, that give

insights into the Russian fruit industry and wild Haskap found in Ontario:

Visiting various fruit farms in Saskatchewan, Manitoba and Ontario.

Goal: Better understanding of the Canadian fruit industry, production methods and needs for improved varieties.

Activity: Dr. Sorokin and I visited 6 fruit farms in Saskatchewan, Manitoba, and Ontario and dozens of fruit farms were seen from the road, especially in Ontario. Also, a few produce stands were visited. Only in a few instances were growers available for discussing their farm. We also visited a few nurseries and greenhouses.

Results: Fruit farms of various sizes and degrees of sophistication were observed from small u-pick operations to large scale orchards with processing capability. Some operations merged their farms with other businesses such as gift shops and greenhouses for houseplants. This led to discussions of fruit growing in Russia. According to Dr. Sorokin, there are practically no fruit farms in Russia and virtually all produce in grocery stores is imported. (Dr. Sorokin is very familiar with St. Petersburg & Moscow) Instead, many Russians raise their own their own produce, often involving many family members at dachas.

Fruit farming in Russia may be very similar to the recent past on the Canadian Prairie. Starting in the 1920's and up to about 20 years ago fruit research on the Canadian Prairie was geared toward the homeowner. In much of Russia grain and livestock farming are considered mainstream agriculture and with fruit grown was at home orchards.

On the Prairie, new varieties were made available to nurseries and information was written in gardening magazines. Early fruit farms were often the result of entrepreneurs who were already familiar with raising fruit on the home orchard or were from experienced fruit farmers moving in from the east.

Dr. Sorokin was not aware of any national or local gardening magazines in Russia, but then it is not a mandate of his institute to deal with gardeners nor engage in extension activities. He did not believe that there was any government institute in Russia that has any such mandate. When gardeners contact the Vavilov Institute in hopes of obtaining plant material they are referred to various individuals who may be propagating that

crop. I was given the impression that there are not any large nurseries in Russia and that the average Russian gardener must spend much effort trying to track down a source for any specific fruit variety.

How have the Canadian participants of your project increased their knowledge of the Balkan and Eastern European reform process?

During his visit, Dr. Sorokin met with or lectured to at least 40 agricultural researchers and over 60 farmers. Most of the farmers and many of the researchers were previously unaware of the Vavilov Institute nor its large network of researchers and plant collections and that it maintains thousands of fruit varieties. All of these participants became aware to some degree of the reforms and changes occurring in Russia.

As the main Canadian participant, I was present for 95% of the meetings with Dr. Sorokin. We had extensive discussions of the reform processes occurring in Russia in regards to their fruit industry and the Vavilov Institute. The following is my impression based on conversation with Dr. Sorokin and others we met during this project. I have never been to Russia so I lack firsthand knowledge.

While various industries in Russia have become 'capitalized' there has not been a coordinated effort to create a fruit industry capable of marketing products either in Western Russia or for export markets*. While it is positive that the Vavilov Institute continues to exist and carry out its mission to preserve plant germplasm, it is not well funded. Few recent university graduates are being employed despite the fact that a large percentage of researchers and curators at the Vavilov Institute are over 65. Some researchers continue well past retirement

age because they love what they are doing or because they are unlikely to get a job in another industry. Operating funds come almost exclusively from a planned yearly budget from the federal government.

*note: there may be some fruit farms organized in the Siberian part of Russia per other sources.

Unlike Canada, there are no grower groups, provincial governments or other institutions to apply for additional funding. Dr. Sorokin mentioned that some funding from outside Russia was obtained a few years ago by the director of the VI, but researchers at Vavilov are not aware of places to apply for funding.

New varieties are occasionally created by Vavilov researchers as a byproduct of genetic studies but plant breeding is not a mandate of the institute. Consequently, royalties are not funding research at VI. Rules do not exist at Vavilov for how a royalty would be distributed if it existed. At the University of Saskatchewan 65% of variety royalties go to the breeding program that produced it and 35% to the Department of Plant Sciences and the College of Agriculture and Bioresources. At the University of Guelph, 50% goes to the breeder as a salary bonus and 50% goes to general University funds. The Canadian examples mentioned offer strong incentives for breeders to not only develop new varieties but also get them commercialized as royalties only occur when someone buys the plants. This also leads to more extension activities to make the public aware of new breakthroughs in plant breeding.

Vavilov Institute would have to change its mission statement and create new operating policies to take on the role of plant breeding and commercialization of the fruit industry in Russia. However, the fruit collections at

Vavilov are an important asset especially for northern areas around the world. Its current strategy of working with breeders of other institutes is a wise one as fruits need to be bred for different climatic regions.

One of the areas Dr. Sorokin was particularly interested was the selection process and important attributes for breeding fruit crops suitable for mechanical harvesting. Curators at VI regularly study their plant collections for suitability for many quality traits. If curators were to evaluate their collections for suitability of mechanization they could identify which varieties could be used currently and help breeders identify useful parents. This could set the stage for large scale fruit production and commercialization in the future. But it seems likely that other institutions in Russia such as universities need to be involved to help build a fruit industry.

Plant gathering expedition in Northern Ontario.

Goal: New germplasm obtained. Better understanding of where blue honeysuckles (Haskap) live in the wild in Canada, which may give insight into cultural methods and areas they could be grown.

Activity: We spent 10 full working days gathering plants in Northern Ontario. Mostly this was the area north of the Great Lakes going as far north as Red Lake and Pickle Lake. We started from Manitoba and went as far east as North Bay before going south to visit researchers and farmers in Southern Ontario. Most plants were gathered in the north while the southern part of the expeditions was spent visiting universities, research stations, fruit farms and other areas of interest.

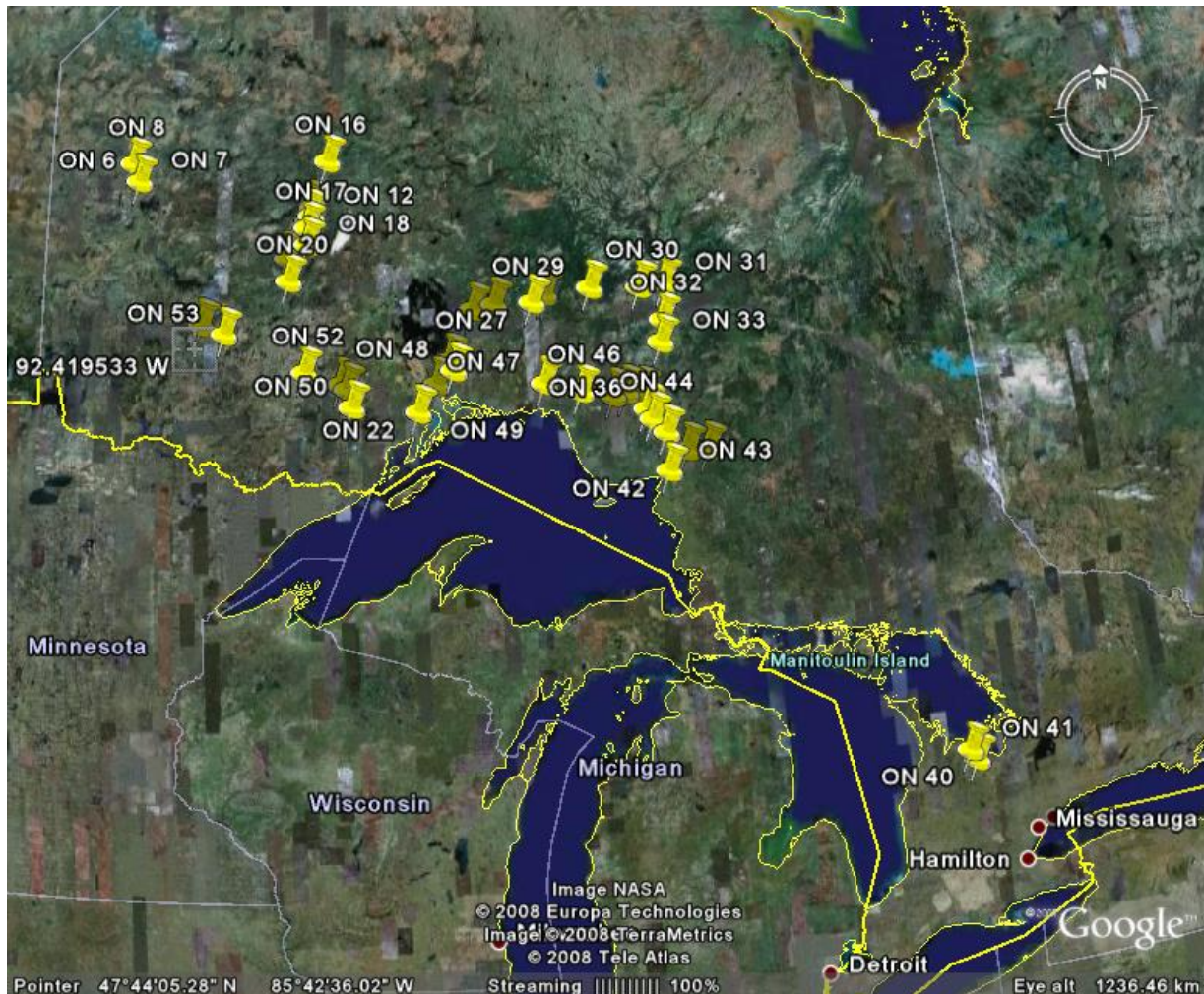


Figure 2. Locations where blue honeysuckles were found during the expedition.

Although the main goal for this collection trip was to obtain blue honeysuckle (haskap) plants, we gathered seeds of other fruit species that were of interest to either of us. At each location, GPS coordinates were taken and notes made on the habitat, nearby plant species, and unique characteristics of the Blue Honeysuckle plants and fruit. When a site was located which had blue honeysuckles, we would travel at least 30km before exploring another site. In most cases it took 35 minutes to explore, take plants samples and write notes. Rarely did we remove whole plants. Most plants had

multiple stems and we would take just one, leaving the mother plant in the location.

Results: Fruit seeds or plants were gathered from 54 locations with 44 sites containing blue honeysuckles. Approximately 175 wild blue honeysuckles plants were gathered in Ontario. Other fruit crops seeds gathered were from: Raspberries, cranberries, high bush cranberries, blueberries, currents and aronia. Strawberry plants were occasionally gathered too. It should be noted that the resulting collection of blue honeysuckles is likely the only collection ever gathered from

Ontario. Dr. Sorokin mentioned that there are only a couple plants from Canada in the Russian collection and that these were from Alberta. Although it was past optimum time for fruit, blue honeysuckle berries were found in several locations and seeds of these and other species were shared with Dr. Sorokin. Dr. Sorokin also took many samples which he pressed and dried for his institute herbarium, he also made some pressed samples for the U of Sk.

Wild fruit plants or seeds were collected in 54 locations in Ontario. At least twice as many locations were searched that did not have plants of interest. Dr. Sorokin took at least 40 seeds samples back to the VIR genebank while all plants went to the University of Saskatchewan collection.

We may have visited 60 sites that did not contain blue honeysuckles especially during the 1st few days of the trip. After finding them in a few sites and noting the other plant species in the area, we became better at deciding where to stop and look. Key

indicator species included Black Spruce, Alders, Labrador Tea, and Cattails. Blue Honeysuckles were found in low lying wet areas often on the edges of bogs in high organic soils or peat.

Dr. Sorokin noted that the wild High Bush Cranberries were much more flavourful than any accessions in his collection. Dr. Sorokin mentioned that the Ukraine might be very interested in such germplasm since that plant is practically a national symbol there.

Dr. Sorokin stated that the most valuable part of the plant collection trip for him was that we had so much time for discussion. As a result, we have a much better insight into the challenges and possible solutions facing fruit breeding, research and industry development in each other's countries.

Footnote: Dr. Sorokin and I continue to have correspondence and have been exchanging seeds.