State of Alaska

Annual Report for Calendar Year 2019
to the W-6 Technical Committee

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NPGS Germplasm Use in Alaska

Eleven individuals from Alaska placed 15 orders and received 120 accessions from the NPGS in 2019. In general, these materials were utilized for varietal evaluations and varietal development with a focus on cold hardiness and adaptability to Southcentral Alaska in the Anchorage, Matanuska-Susitna Valley, and Kenai Peninsula areas and Interior Alaska in the Fairbanks area. Alaska has numerous small-acreage farms, less than five acres, which produce a wide range of fruits and vegetables for self-consumption and local sales through farmers markets and other direct outlets. Some local produce is also sold through grocery stores, including chains such as Fred Meyer and Carrs.

Danny Barney of Wasilla received 12 accessions of *Rheum rhabarbarum* for use in a breeding program to develop improved culinary rhubarb cultivars (baking and juicing) for commercial production in Alaska. Dr. Barney is a private fruit breeder and served as curator of the *Rheum* collection at the USDA-ARS Arctic and Subarctic Plant Gene Bank in Palmer, Alaska and the medicinals and herbaceous ornamentals collections at the USDA-ARS North Central Regional Plant Introduction Station in Ames, Iowa. The NPGS *Rheum* collection is proving incredibly important because it has been thoroughly studied for morphological traits and has been genetically profiled, showing the degree of interrelatedness between clones in the NPGS collection. Very few of the accessions in the collection are commercially available in the United States.

Aaron Brothers of Brothers' Grow in Anchorage received 2 *Lactuca sativa*, 1 *sporobolus compositus* and 1 *Rubus idaeus* accessions. Mr. Brothers is involved in varietal development and the creation of new hybrids.

Duane Couch of Palmer received 5 *Pyrus communis* and *6 Malus domestica* accessions. Mr. Couch is conducting trials to determine suitable cultivars for growing in Southcentral Alaska with the view that a warming climate may provide new options for fruit growing in Alaska. He is involved with the Alaska Pioneer Fruit Growers Association, which facilitates information sharing and exchange.

Stephen Gerlek of Anchorage received 8 *Pyrus communis*, 3 *Pyrus* hybrid, 4 *Pyrus pyrifolia* and 11 *Malus domestica* accessions. Mr. Gerlek has engaged to evaluate apple and pear varieties for their suitability in subarctic urban settings.

Rupert Hollaus of Fairbanks received 5 *Cydonia oblonga*. Mr. Hollaus is evaluating the cold hardiness of Quince in Interior Alaska.

Victor Johanson of Fairbanks received 6 *Pyrus* hybrid, 15 *Malus domestica*, 8 *Malus* hybrid, 1 *Prunus cerasus*, 4 *Ribes Uva Crispa*, and 1 *Rubus Idaeus* accessions for use in botanical/taxonomic investigations. His research goal is to determine the suitability of various cultivars for interior Alaska climatic conditions.

Christine Macknicki of the Alaska Plant Materials Center in Palmer received 2 accessions of *solanum tuberosum* for evaluation as to their suitability for production in northern latitudes. Potatoes are a popular garden and farm crop in Alaska.

Steven Masterman of Fairbanks received 2 *Malus domestica* accessions for varietal survival evaluations in Interior Alaska.

Brett Merrow of Nikiski (Kenai Peninsula) received 1 *Lactuca sativa* accession. Mr. Merrow reports that he is involved in breeding, conservation, and sustainability practices with a focus on studying the effects of a warmer climate and increased rainfall in Alaska, specifically USDA Plant hardiness Zone 4b.

Aaron Stierle of Solitude Springs Farm & Vineyard in Fairbanks received 9 accessions of *Vitis* hybrid and 2 *Vitis riparia* accessions. He reports that his goal is to use the germplasm to breed economically viable, ultra-early ripening grape varieties (table, juice, and wine) that are adequately cold hardy for warmer locations in interior Alaska. He further states that there are no commonly available grape varieties that ripen early enough in that region.

Matthew Willison of Homer on the southwestern tip of the Kenai Peninsula received 3 *Secale cereal*, 1 *Triticum aestivum*, 4 *Triticum monococcum*, and 4 *Triticum turgidum* accessions. Mr. Willison is exploring the potential use of these accessions in his region. He reports that, while these crops are not presently grown in the region, he believes there is a market for them there.

PUBLICATIONS:
No published research reports by Alaska recipients of NPGS germplasm appear to have been made in 2019.