

# Alaska

Compiled by Lisa Taylor

For 2018, NPGS shipped 17 orders with a total of 1805 items (21 from WRPIS) to 10 people in Alaska. Fifteen orders were submitted over the GRIN-Global Website and two others were through emails or other means. We received 5 responses to our email questionnaire from requestors. Their responses are listed below:

(1) Danny L. Barney, Ph.D.

1. Did the material arrive in good condition? Did the material germinate and/or root well? Did the material grow well? Any observations you may have on general growth and development?

The material was high-quality, well-packed, and shipped in good condition. Because of a mix-up in communications, I did not realize that the materials had been shipped and they remained in postal facilities for approximately a week. This resulted in deterioration of the rhizome cuttings and some failed to establish. The remainder of the cuttings rooted and are growing well. For my 2019 order, I requested that I receive an email notification at the time of shipping.

2. Was this material useful to you? If yes, how? If no, why not?

The material should prove very useful for my rhubarb breeding program. Because of the time required for establishment, I am at least one year away from making my first crosses.

3. What were the outcomes from any plant germplasm you received: Was it part of a research experiment? Did you make crosses? Are you developing any new plant offerings? What are your future plans with this material?

I am a retired USDA-ARS scientist and plant germplasm curator, as well as a University plant breeder. I am using the rhubarb accessions from the National Plant Germplasm System to develop improved culinary and juicing cultivars for commercial production in Alaska. While still employed by ARS, I participated in a project that involved genotyping the entire NPGS Rheum clonal collection. The resulting genetic information combined with phenological and biochemical trait observations by myself and other ARS scientists in Alaska are serving as guides for selecting crosses. The first crosses should be made in 2020.

4. Have you completed any publications or news items related to the material you received at any time? If yes, please include a list of your publications and news items.

I do not yet have data upon which to report for the germplasm received.

(2) Rupert Hollaus

Did not answer the questions specifically, but his comments are below (sent via a few strings of emails):

Seeds. I have lots of problems with seeds. Your *prunus tomentosa* seeds from over 10 years ago had to be discarded just a few years ago. So now I have them from the WSU cooler there thanks to one of the supervisors. I will get to the library to forward you something I learned about hard to germinate seeds and teach your departments something about seeds that are hard to germinate that finally came true for me this winter regarding other *prunus pennsylvanica* seeds that are extremely difficult but working for me now. It came from a now retired technician at the Saskatchewan university fruit breeding program. I will go and find it at the library what I learned.

In recent years I have had received fruit tree wood of various kinds from the GRIN but are not ready yet to be evaluated. They are mostly in interior Alaska and awaiting my next evaluation this spring when I can determine survivability of last winter's cold.

However, from further back ~7-8 years ago I received budwood from ARS plum breeding program and I will send that progress of what happened so far. I received all 3 of the googled terms: "trio of plums" in person in California. I will see if I can find those emails first, then will reply.

My last trip to Prosser WA WSU was December 2018 to have lab test results done on sometimes wild choke-cherry material which the lab is helping me determine which of the wild ones are good to work with in my interior Alaska projects on my rental property there.

I have numerous emails that were generated between myself and the current staff at UAF in Alaska concerning the surveys done between Washington and through Canada to Alaska. But since that staff has no server to host there is no feasible option to make comments via any site other than such that were recorded in emails towards Katherine D. who facilitates the UAF gardens there.

I feel like starting with the budwood received from Ramming first since part of that assessment has something positive and possibly useful in it. Then tomorrow maybe I can gather Katie's emails.

Rupert.

David W. Ramming in April of about 2011 prepared some 4 cultivars of plumwood for me that were received in good condition. It was part of an effort to start breeding big plums to hardy wild species of plums that David Griffin of Minnesota was also involved with. Then from those 4 plums I was to (and did) send them to Dave. I told Dave that I had more luck in Alaska spring budding rather than summer budding. Dave listened and tried. He since had better winter survival based upon the spring budding. The years prior to those I sent him were huge budding failure years. He therefore wrote an article based upon the method as outlined in the Hartmann & Kester Principles of Plant Propagation book. Subsequently, I had sent that to other experimental propagators who also had great winter survival rates.

In Alaska I also use spring budding on wild chokecherry, but it will not seem to work using tiny buds from *prunus fruticosa* using any style of budding. So that's conclusive that the best method to bud for northerners is the spring budding.

When around April of 2011 I started to spring bud two of the Ramming clones 'black splendor' and 'owen t' plumwood, I learned very fast about flooding of grafts. The only buds that never flooded were those that had been grafted high and not right at the wet ground with high sap pressure. So, this was in PNW (Washington), where sometimes it's best to summer bud.

The high buds that took were 'owen t'. The crops were huge and also expediency of cropping! Which is very interesting here in our maritime climate that large productive plums can sometimes work out. The single sole possible drawback of 'owen t' in PNW on my myrobalan/emerald beaut/citation (multi graft sequence) is that the cultivar operates like peach does on citation rootstocks as reported by other publications online. It was also my own personal experience when I had my PNW 'frost' peach on citation. -The problem: "leggy".

I have other plums more than emerald beaut on same tree and none as productive as the owen plum.

This season I am finally getting time to crossing my 'owen t' pollen to a prunus nigra hardy plum of which the results will be screen out for in Alaska for a future day.

The prunus tomentosa had deep dormancy from being too dried out at some point in time so I had given up. Instead I was helped by through WSU Prosser and have received the best indexer plants to bring with me to Alaska.

The pin cherry that used to be a difficult process for me is all worked out with some of the advice coming from Rick the retired technician in Saskatchewan per these 2 attachments. I am copying this to UAF as an aid to them on what is being learned from their own seeds and propagating them.

I first wanted to go into the Alaska emails then later in another email I hope to include improving results for germinating pin cherry by Rick Sawatsky in Saskatchewan and my own evidence, some of which I shared with Alaska as well but not completely. So in the 2nd effort into emailing I must remember to update Katie in Alaska by supplying her with the copy of my recent finding of pin cherry.

With a goal in mind of breeding together sweet cherry (*p avium*) and pin cherry (*p pennsylvanica*) both Pat Holloway (PHD), and Bob Bors (PHD), met around Fairbanks during a gardening event that year of 2007. I am just an electrician that read Pat's books on fruit breeding, but I also went through the proper process that same year of importing romance series Saskatchewan cherries, so they agreed to let me mingle along with each other in pin cherry discussions.

Subsequently his tech person Rick S. started trying to make the crosses to pistillate pin cherry in Saskatchewan but failed to find fertility between the two. I tried 200 flowers but only 2 seeds and from there nothing happened. After around 2010 I found a hardy group of bitter cherry (*p emarginata*) close to Easton WA. The same year they readily pollinated to the pin cherry at UAF. The results were so encouraging that I thought I could find bitter cherry as the bridge between the two species, so I tried X *pugetensis* to the UAF pin cherries. Actually the same time as the bitter cherry pollen in side by side comparisons. The X-*pugetensis* hybrids seemed to be okay as

well but the results were about half of the that of bitter cherry pollen. I agree with those results since I also had low set on X-pug with pin cherry pollen in WA.

However just like a pound of nanking (p tomentosa) from Prosser WA there was never any that germinated so I terminated all hybridizing attempts. However, in recent years upon recovering a sole (1) hybrid of my original pin x bitter cherry from under where the controls of pistillate pin cherry had occurred I became interested in starting that up once again. The hybrid has since cropped twice in my Alaska garden and is fertile. It carries some of the bitter sour smell in the wood that flows from bitter to X pugetensis. It is very full of vigor.

So, I reached out to Bob's now retired technician whom gave me advise concerning germination of pin cherry and brought my own hybrid seed back to WA. I also picked some pins at UAF and brought those seeds back. Rick helps since I helped him with his future plans for BC pin-bitter cherry that I found in all my travels through BC Canada. His we call the Scoggan eco-type project, whilst mine is more of the sour wooded northern WA project, however each has the same and similar ideals to make it happen with sweet cherry. Furthermore, the sweet cherry pistils are too long for the UAF pin cherry pollen grains to reach.

Sorry but nothing in those files chained into my results that were very positive as all the seeds that survived being treated with antibiotics are all growing since about 20 days ago.

He included the following email exchange as an attachment:

Sawatzky, Rick <rick.sawatzky@usask.ca> Tue, Dec 4, 2018 at 4:29 PM  
To: Rupert Hollaus riverrental@gmail.com

Hi Rupert: Pincherry germination has been very tricky for me. I have seen them volunteer ten years after the seed trees have been removed. They have a very difficult dormancy. I think it's an impermeable seed coat. The ways that I have gotten them to germinate fairly well are to scarify very aggressively with a file or crack and excise the kernel followed by soaking and rinsing prior to stratification for at least 90 days. The filing was done completely through the seed coat on the rounded end away from the embryonic radical. When cracking I used a vise so that fewer kernels were crushed. I have ordered four sweet cherry trees, each a different cultivar. I'm very interested to see if they will cross reciprocally with Scoggans or just one way; same for the road-side selections. Do I understand correctly that you suspect that you have seen 75% avium, 25% scoggan? I suppose that a raven or crow could swallow a whole sweet cherry and then poop out the pit near a fence post.

Rick Sawatzky  
Volunteer  
Fruit Program

(3) Gary Masog

1. Did the material arrive in good condition? Did the material germinate and/or root well? Did the material grow well? Any observations you may have on general growth and development?

The Scion wood was in excellent shape and nearly all grafts succeeded and grew normally.

2. Was this material useful to you? If yes, how? If no, why not?

Too early for any results yet. New varieties are tested for quality and ripening in our short season.

3. What were the outcomes from any plant germplasm you received: Was it part of a research experiment? Did you make crosses? Are you developing any new plant offerings? What are your future plans with this material?

Too early for any results, being tested at furthest north community orchard.

4. Have you completed any publications or news items related to the material you received at any time? If yes, please include a list of your publications and news items.

No.

(4) Duane Couch

1. Did the material arrive in good condition? Did the material germinate and/or root well? Did the material grow well? Any observations you may have on general growth and development?

Material ordered was pear scion from Corvallis and apple scion from Geneva. It arrived in excellent condition and grafted to my rootstock well. It grew well, and I've been looking at it this spring, but it is early to determine how well the plants fared through the winter. Generally, the apples look good, and most the pears look good, though I'm not sure my pear rootstock was adequately hardy, so I believe I will be experimenting additionally with different rootstock.

2. Was this material useful to you? If yes, how? If no, why not?

The material was very useful to me in long term study to determine if some of these cultivars will be appropriate for growing in South-central Alaska. At this point I can't determine viability other than first winter survival. Your program gives me access to many cultivars that I would not be able to trial without your assistance, as availability elsewhere is limited.

3. What were the outcomes from any plant germplasm you received: Was it part of a research experiment? Did you make crosses? Are you developing any new plant offerings? What are your future plans with this material?

I made no crosses or new plant developments. I am specifically trying to grow fruit that is not generally grown here, as the context of climate change seems to be making new agricultural possibilities. With the success of most cultivars surviving their first (and perhaps most vulnerable) winter, I am encouraged with the potential. Whether the temperature and length of summer is sufficient to produce quality fruit won't be gauged for a few years yet.

4. Have you completed any publications or news items related to the material you received at any time? If yes, please include a list of your publications and news items.

I have completed no news items or publications regarding said plant materials yet, as the trialing is still several years from demonstrating success or failure. I am in contact with Alaska Pioneer Fruit Growers Association, and also with some of the personnel from the Plant Materials Center, which studies agricultural possibilities locally.

Thank you for being part of this program which is tremendously helpful to expand Alaskan agriculture towards its full potential. I am excited to find out all we can learn.

Thank you,  
Duane Couch

(5) Stephen Gerlek

1. Did the material arrive in good condition? Did the material germinate and/or root well? Did the material grow well? Any observations you may have on general growth and development?

Yes. The scion wood arrived in great condition and our Orchard Master was able to successfully graft them on hearty local root stock. The plants are currently being taken care of in a heated and well-lit garage until the weather turns and they can be transported to the Commons for planting in the orchard. We are currently coordinating a volunteer work party for transplanting that will include school children from the neighborhood elementary school.

2. Was this material useful to you? If yes, how? If no, why not?

Yes. The Government Hill Commons is the northern most community orchard in North America and our mission is to showcase the variety of fruit trees that can grow and thrive in this sub-arctic urban environment – as well as conducting experiments and research on what additional types and varieties of fruit trees can do well here.

3. What were the outcomes from any plant germplasm you received: Was it part of a research experiment? Did you make crosses? Are you developing any new plant offerings? What are your future plans for this material?

See #2 above.

4. Have you completed any publications or news items related to the material you received at any time? If yes, please include a list of your publications and news items.

<https://www.adn.com/alaska-news/anchorage/2018/09/04/how-an-abandoned-lot-in-government-hill-is-being-transformed-into-an-orchard-and-community-space/>

<https://www.adn.com/slideshow/alaska-news/anchorage/2017/09/09/photos-government-hill-orchard-begins-to-take-shape/>

<http://www.lindainfantelyons.com/blog/2018/10/17/government-hill-commons-mural-ribbon-cutting-celebration>

<https://www.muni.org/Departments/parks/Documents/2017-04-11%20Govt%20Hill%20Commons%20MP%20-%20PRC%20Draft.pdf>