Variety Trials are published by the Alaska Agricultural and Forestry Experiment Station to provide information about ongoing or inconclusive applied research and experiments.

Vegetable Variety Trials 2017

Heidi Rader, Extension Horticulture Faculty

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Vegetable cultivar trials were conducted at the Georgeson Botanical Garden (GBG) at the Alaska Agricultural and Forestry Experiment Station (64° 51'N, 147° 52'W) for many years until 2009, when funding stopped. Trials were started again in 2017.

The trials at GBG are intended to help gardeners and farmers choose varieties that perform well in the Tanana Valley. Plot sizes are small, and results could vary when grown on a larger scale. Gardeners and farmers can help document how different varieties perform on their own gardens and farms using the Grow&Tell mobile app.

Weather data were compiled from a U.S. Weather Service station, elevation 475 feet (145m), located approximately 350 feet (107m) west of the garden. The summer was warm, but the spring and fall were cold and rainy.

In 2017, four varieties of beets, carrots, radishes and turnips (16 cultivars total) were tested. The vegetables were direct seeded on June 16. Two carrot varieties (Yaya and Sugar Snax) and one beet variety (Detroit Dark Red) germinated poorly. Any plots with empty spaces were reseeded. Carrots, beets and turnips were reseeded on June 30 and daikon radishes were reseeded on July 3. Prior to planting, 10-20-20 slow-release fertilizer was applied at a rate of 4 pounds per 100 square feet.

A randomized complete block experimental design was used and plots were replicated three times. All cultivars were

Glenna Gannon, research assistant, and Heidi Rader, project director, with the turnip varieties being trialed

planted according to recommended commercial spacing guidelines in twin rows. Rows were 5 feet wide on center. Plot sizes were designed to be large enough so that there were about 20 to 30 plants in each plot. They varied from 24 inches long for carrots to 90 inches long for daikon radishes.

Crops were irrigated using drip irrigation and hand weeded, as needed, throughout the summer. Turnips and radishes were covered with Remay spun-bonded fabric to prevent root maggot damage. Harvest began in mid-July and continued weekly until September. Mature vegetables were harvested each week. Diseased or very deformed vegetables were not included in the yield.

Yields for each replication were summed, then averaged by cultivar and reported in terms of yield per row feet and yield per plot. In addition to weight and number harvested, germination rates, uniformity, plant vigor, susceptibility to pests and disease were also rated on a scale of 1 to 5 (1 being very poor and 5 being excellent). These were averaged for each replication, then averaged by cultivar. Anything else deemed noteworthy was also recorded..

2017 Growing Season

Temperature (degrees F)	May	June	July	August	Sept.
Average daily max.	62	74	76	69	58
Monthly high	73	90	88	85	71
Average daily min.	37	50	55	49	38
Monthly low	29	36	47	38	32
Rainfall (inches)	0.93	1.98	3.16	1.98	1.76

Last frost	Frost-free days	First frost
5/27	125	9/30

Retail sources of plants and seeds

- Burpee & Co., 300 Park Ave, Warminster PA 18991, www.burpee.com
- Johnny's Selected Seeds, 184 Foss Hill Road, Albion, Maine 044910, www.johnnyseeds.com
- Territorial Seed Co., 20 Palmer Ave, Cottage Grove, Oregon 97424, United States, www.territorialseed.com/

Note: To simplify information, trade names of products have been used. No endorsement of named products by the University of Alaska Fairbanks Cooperative Extension Service is intended, nor is criticism implied of similar products that are not mentioned.

Variety trials in Alaska:

- To access agriculture research conducted by the UAF School of Natural Resources and Extension go to www.uaf.edu/snre or https://scholarworks.alaska.edu/handle/11122/1013 and search by researcher or by topic. Search for author Grant Matheke for past variety trials (as far back as 1978).
- Go to www.georgesonbotanicalgarden.org for research on perennials, annuals, flowers, vegetables and herbs in Fairbanks, Alaska. Look under the Research & Education tab.
- To see results from past trials, go to www.uaf.edu/snre/research/publications/variety-trials/.
- To learn more about the importance of testing and choosing the right vegetable variety for where you live, go to http://bit.ly/2y3uabV and click on the video "How to Choose Varieties to Grow."
- Go to http://snrenews.blogspot.com/2017/07/limited-variety-trials-begin-at.html to learn more about these trials.

UAF Cooperative Extension Service

- Go to www.uaf.edu/ces to find out more about UAF Cooperative Extension Service
- To find contact information for your nearest Extension agent, go to www.uaf.edu/ces/gardening/.

For more information

- Search hundreds of Extension websites nationwide here at https://search.extension.org/.
- Find research and educational opportunities for sustainable agriculture at www.sare.org/.
- Sign up for a weekly, digital newsletter on sustainable agriculture, find an internship or educational opportunity or ask an expert at https://attra.ncat.org/.

			Spacing					1=very poor, 5=excellent					
Vegetable	**Cultivar**	**Source**	**Within Row**	**Between Rows**	**Plot Length**	**Date Seeded**	**Harvest Period**	**Uniformity**	**Plant Vigor**	**Susceptibility to Pests and Disease**	**Yield/Plot (lb)**	**Yield (lb/foot)**	**Comments**
Beets													
	Boro	Territorial	3 in.	12 in.	48 in.	6/16	7/31-8/22	4.4	4.1	4.3	4.0	1.0	All beets were similar in uniformity, plant vigor, and productivity. They're a favorite of voles!
	Detroit Dark Red	Burpee	3 in.	12 in.	48 in.	6/16	7/31-9/20	4.2	4.2	4.2	4.1	1.0	
	Merlin	Johnny's	3 in.	12 in.	48 in.	6/16	7/31-9/6	4.6	4.4	4.7	4.9	1.2	
	Red Ace F1	Johnny's	3 in.	12 in.	48 in.	6/16	7/31-9/20	4.5	4.3	4.4	5.5	1.4	
Carrots													
	Napoli	Johnny's	1 in.	12 in.	24 in.	6/16	8/15-9/20	3.6	4.5	5.0	2.8	1.4	Crisp, sweet, some braiding
	Scarlet Nantes	Burpee	1 in.	12 in.	24 in.	6/16	8/15-9/20	3.9	4.6	5.0	3.0	1.5	Very Crisp. Grew well
	Sugarsnax 54	Johnny's	1 in.	12 in.	24 in.	6/16	8/15-9/20	3.8	4.4	5.0	2.6	1.3	Hard to harvest without breaking the end off in ground, Poor germination rate and yield.
Worst Pick	Yaya	Johnny's	1 in.	12 in.	24 in.	6/16	8/15-9/20	4.0	4.4	5.0	1.3	0.7	Poor germination rate and yield.
Daikon Radishs													
	Alpine	Johnny's	5 in	18 in.	90 in.	6/16	7/18-8/15	4.2	4.4	4.6	9.8	1.3	Grew very large
	Miyashige	Johnny's	5 in.	18 in.	90 in.	6/16	7/18-8/15	3.8	4.3	4.6	7.7	1.0	Highly susceptible to bolting
	Summer Cross No. 3	Johnny's	5 in.	18 in.	90 in.	6/16	7/18-8/15	3.8	4.2	4.6	10.7	1.4	Grew very long
Worst Pick	White Icicle Short Top	Johnny's	5 in.	18 in.	90 in.	6/16	7/18-7/31	2.1	3.2	1.6	1.5	0.2	Susceptible to rotting and cracking
Turnips													
	Golden Ball	Territorial	4 in.	18 in.	48 in.	6/16	7/18-9/6	2.9	4.9	3.9	2.9	0.7	Grew lots of foliage, took a long time to develop harvestable root
	Purple Top White Globe	Territorial	4 in.	18 in.	48 in.	6/16	7/18-8/15	3.2	4.2	3.2	3.2	0.8	Susceptible to splitting. Root maggots seemed to prefer
	Scarlet Queen Red Stem	Johnny's	4 in.	18 in.	48 in.	6/16	7/18-8/15	3.7	4.2	4.4	3.7	0.9	Some cracking, flesh mild and crisp
Top Pick	Tokyo Cross	Territorial	4 in.	18 in.	48 in.	6/16	7/18-8/15	4.6	4.6	4.9	4.6	1.2	Beautiful, uniform turnips. Very sweet and mild flesh

About the Alaska Agricultural & Forestry Experiment Station

The federal Hatch Act of 1887 authorized establishment of agricultural experiment stations in the U.S. and its territories to provide science-based research information to farmers. There are agricultural experiment stations in each of the 50 states, Puerto Rico, and Guam. All but one are part of the land-grant college system. The Morrill Act established the land grant colleges in 1862. While the experiment stations perform agricultural research, the land-grant colleges provide education in the science and economics of agriculture.

The Alaska Agricultural Experiment Station was not originally part of the Alaska land grant college system. In 1898, the station was established in Sitka, also the site of Alaska's first experiment farm. Subsequent branches were opened at Kodiak, Kenai, Rampart, Copper Center, Fairbanks and Matanuska. The latter two remain as the Fairbanks Experiment Farm and the Matanuska Experiment Farm. The USDA established the Fairbanks experiment station in 1906 on a site that in 1915 provided land for a college. The land transfer and money to establish the Alaska Agricultural College and School of Mines was approved by the U.S. Congress in 1915. Two years later the Alaska Territorial Legislature added funding, and in 1922, when the first building was constructed, the college opened its doors to students. When campuses were opened at other locations, the Fairbanks campus became the University of Alaska Fairbanks.

Early experiment station researchers developed adapted cultivars of grains, grasses, potatoes, and berries, and introduced many vegetable cultivars appropriate to Alaska. Poultry and other animal management was also important. This work continues, as does research in soils and revegetation, forest ecology and management, and rural and economic development. As the state faces new challenges in agriculture and resources management, the Agricultural and Forestry Experiment Station continues to bring state-of-the-art research information to the people of Alaska.

Agricultural & Forestry Experiment Station Publications

Miscellaneous publications are published by the Alaska Agricultural and Forestry Experiment Station to provide information summarizing research and are usually written for a specific lay audience. They often present information that would otherwise only be available as journal articles or specialized flyers for a limited professional audience. They may consist of secondary information or be a bulletin or journal article summary.

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