



Spring 2019 Research Highlights



Testing vegetable varieties

Vegetable trials continue in Fairbanks and will expand to Matanuska Experiment Farm

Finding vegetable varieties that grow well in Alaska has been a goal of experiment stations from their earliest days. Agronomist C.C. Georgeson published his first circular that recommended vegetable varieties in 1906, a year before the Fairbanks Experiment Station and farm opened.

Vegetable variety trials were conducted at Fairbanks Experiment Farm annually for many years before they ended in 2009 due to budget cuts.

Limited vegetable trials resumed at the Georgeson Botanical Garden in 2017 with the testing of four varieties each of carrots, daikon radishes, beets and turnips. For the first year, project director Heidi Rader chose well-known cultivars or varieties that were previously tested there and varieties that had not been evaluated before but seed companies described as cold-tolerant.

Rader, with the help of two research assistants, expanded the replicated trials in 2018 to include 11 varieties of beets, 13 varieties of carrots and six varieties of celery. Each variety grew in three plots. Replicated trials means that the vegetables were grown in multiple plots to allow for variations in soil quality. They were also grown in a randomized complete block design, a standard design for agricultural experiments.

Thirteen varieties of Brussels sprouts, 10 bean varieties, 15 varieties of corn and four watermelon

Found online at: www.uaf.edu/snre/agroborealis

Top photo:

Variety trials project director Heidi Rader prepares to plant celery varieties for the trials.

Bottom photo: Research assistant Glenna Gannon stands among the corn varieties being tested.



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varieties were also evaluated in unreplicated trials for more rigorous tests in the future.

In addition to weighing each crop and variety, the crew rated each variety for plant vigor, bolting sensitivity (or susceptibility to bolt), uniformity, pest resistance, disease resistance and taste. Volunteers who attended three workshops in the garden did the taste testing.

Rader said the goal of the variety trials is to determine which vegetables grow best in a particular location and to provide that information to gardeners and farmers. She notes that the changing climate could affect what grows well here. Also, new varieties need to be tested and older varieties that are sometimes “improved” with mixed results. She plans to update Extension’s publication on recommended varieties for the Interior. Trials usually continue over several years because of the changeability of weather in any given year.

Results in 2018 yielded some surprises, Rader said. None of the top-performing beets, Zeppo, Boro, Subeto and Pablo, was mentioned in Extension’s “Recommended Variety List for Interior Alaska,” although a recommended variety, Detroit Dark Red tasted the best. Celery varieties did uniformly well and

carrot yields were not significantly different among the varieties.

Because variety trials only tell you what grows well in a specific location, Rader encourages gardeners around the state to try using the Grow&Tell mobile



Several of the 15 varieties of corn tested in 2018 did well.

app and website she developed, which allows them to see what vegetable varieties grow best in their areas based on what other gardeners say. The app also invites gardeners to rate the varieties they have grown for taste, yield and reliability. Rader hopes that many gardeners will rate crops, which will make the app more useful for others.



Glenna Gannon prepares to harvest Brussels sprouts grown for the trials.

“We can’t do variety trials out in Fort Yukon or Galena or in Koyukuk,” she says.

In 2019, Rader plans to continue testing many of the crops and varieties tested in 2018, but to eliminate the low-performing varieties or crops that did not mature, such as the watermelons. Celery, beans, carrots, beets and corn will be grown. The same varieties will be grown in replicated trials at the Matanuska Experiment Farm in Palmer, which will also evaluate potatoes for the Alaska Plant Materials Center.

The National Institute of Food and Agriculture has funded the research through 2021, but Rader hopes to continue the trials beyond that. She likes having the trials at the botanical garden, which gets many curious visitors. “People are always stopping by and asking questions,” she said.

Rader also plans to aggregate past results of variety trials to document changes over time, perhaps as a result of a changing climate. See results of recent and past variety trials at www.uaf.edu/snre/research/publications/variety-trials.

Agricultural & Forestry
Experiment Station



**AGRICULTURAL & FORESTRY
EXPERIMENT STATION**

2150 Koyukuk Drive
(O'Neill Bldg., UAF Campus)
P.O. Box 757200, Fairbanks AK
99775-7200



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