

ALASKA GROWN BARLEY AND THE FAIRBANKS NORTH STAR BOROUGH SCHOOL DISTRICT

Overview

Located in interior Alaska, the Fairbanks North Star Borough School District serves daily lunches for over 5,000 of its 14,300 students.¹ The district includes 35 public, charter, magnet, and specialized schools that range in size from a rural elementary school of fewer than 100 students to a high school of 1,200 students.

Fairbanks' efforts to incorporate Alaska Grown foods into its meal program is part of an extensive Farm to School movement in Alaska.

The state Legislature passed legislation to formally create the Alaska Farm to School program in 2010.² This included the appropriation of \$3 million to the Nutritional Alaskan Foods in Schools pilot program both in Fiscal Years 2013 and 2014. The funding provides reimbursements³ to individual school districts for the procurement of a wide variety of Alaska Grown and raised products including finfish, shellfish, livestock, milk, fruits, vegetables, native produce and berries that are commercially harvested, poultry and grains. The Fairbanks North Star Borough School District was allocated approximately \$208,000 of this funding each year.



A chicken patty on a 51 percent whole grain bun

Two state agencies play key roles in facilitating the procurement and use of local food products in the state's public schools. The Alaska Division of Agriculture within the Department of Natural Resources runs the Alaska Farm to School program. The Department of Commerce, Community, and Economic

Development and the Division of Community and Regional Affairs (DCCED, DCRA) administers the Nutritional Alaskan Foods in Schools program (NAFS).

From the outset of the program, the state Farm to School coordinator worked to connect potential vendors and school partners through tours of local farms and school kitchens. These have proven very instrumental in giving vendors and foodservice staff the opportunity to build relationships and understand each other's capabilities. The program has also tailored recipe development for districts with kitchens of different sizes and capabilities⁴ and generated a variety of promotional materials⁵. During the 2011-2012 school year, the Alaska Grown products most procured statewide in terms of value were seafood, carrots, beef, lettuce and pork.

Recipe Development and Food Preparation using locally grown barley

As Fairbanks began its Farm to School program, one of the first products it sought to incorporate was locally grown barley. The state Farm to School coordinator was instrumental in identifying The Alaska Flour Company as a potential partner for the district. The district began to incorporate Alaska Grown barley flour into hamburger buns and rolls in the fall of 2012. Barley can be stored easily and is available for purchase year-round, making it suitable for use throughout the school year.

The University of Alaska Fairbanks Cooperative Extension Service played a key role in the process, operating under a contract with the state Division of Agriculture's Farm to School Program to develop recipes featuring Alaska Grown products. Extension's test kitchen staff were hired by the Farm to School program to develop the hamburger bun recipe for the Fairbanks North Star Borough School District. The buns use 15 percent barley flour and 36 percent whole wheat, satisfying federal guidelines that require grain products in school meals to contain at least 50 percent whole grains.

Throughout the development process, Extension worked with district staff in the district's central kitchen to ensure that the recipes would be workable on-site. The recipe was tailored to suit the district's existing staffing capabilities and infrastructure, including a newly built central kitchen facility that was equipped to produce bread products in-house.

51% Whole Grain Hamburger Buns

Yield: 60 hamburger buns – 3”x 3”

1/4 cup + 4 teaspoons spice, active dry yeast

4 cups water, 90 degrees Farenheit

1 cup granulated sugar

6 2/3 cups all purpose flour

2 cups Alaska Grown barley flour

4 3/4 cups whole wheat flour

1 tablespoon salt

1 cup non-fat powdered milk

3/4 cup oil, vegetable

2 tablespoons honey

1. Mix all ingredients on lowest setting of electric mixer with dough hook attachment for 5 minutes.
2. Increase speed to medium/medium high and knead for 15 minutes.
3. Remove dough and let set 20 minutes on floured surface.
4. Process into hamburger buns or rolls according to your facility procedure.
5. Raise at 100 degrees Farenheit for 60 minutes.
6. Preheat oven to 350 degrees Farenheit.
7. Bake for 10 minutes or until golden brown.
8. Remove from oven, let cool on cooling rack.

Nutrition Facts	
Serving Size (57g): 1 roll	
Servings Per Container	
Amount Per Serving	
Calories 160	Calories from Fat 35
% Daily Value*	
Total Fat 4g	6%
Saturated Fat 0.5g	3%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 140mg	6%
Total Carbohydrate 28g	9%
Dietary Fiber 3g	12%
Sugars 5g	
Protein 4g	
Vitamin A 0%	Vitamin C 0%
Calcium 2%	Iron 8%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:

	Calories: 2,000	2,500
Total Fat	Less than 65g	80g
Saturated Fat	Less than 20g	25g
Cholesterol	Less than 300mg	300mg
Sodium	Less than 2,400mg	2,400mg
Total Carbohydrate	300g	375g
Dietary Fiber	25g	30g

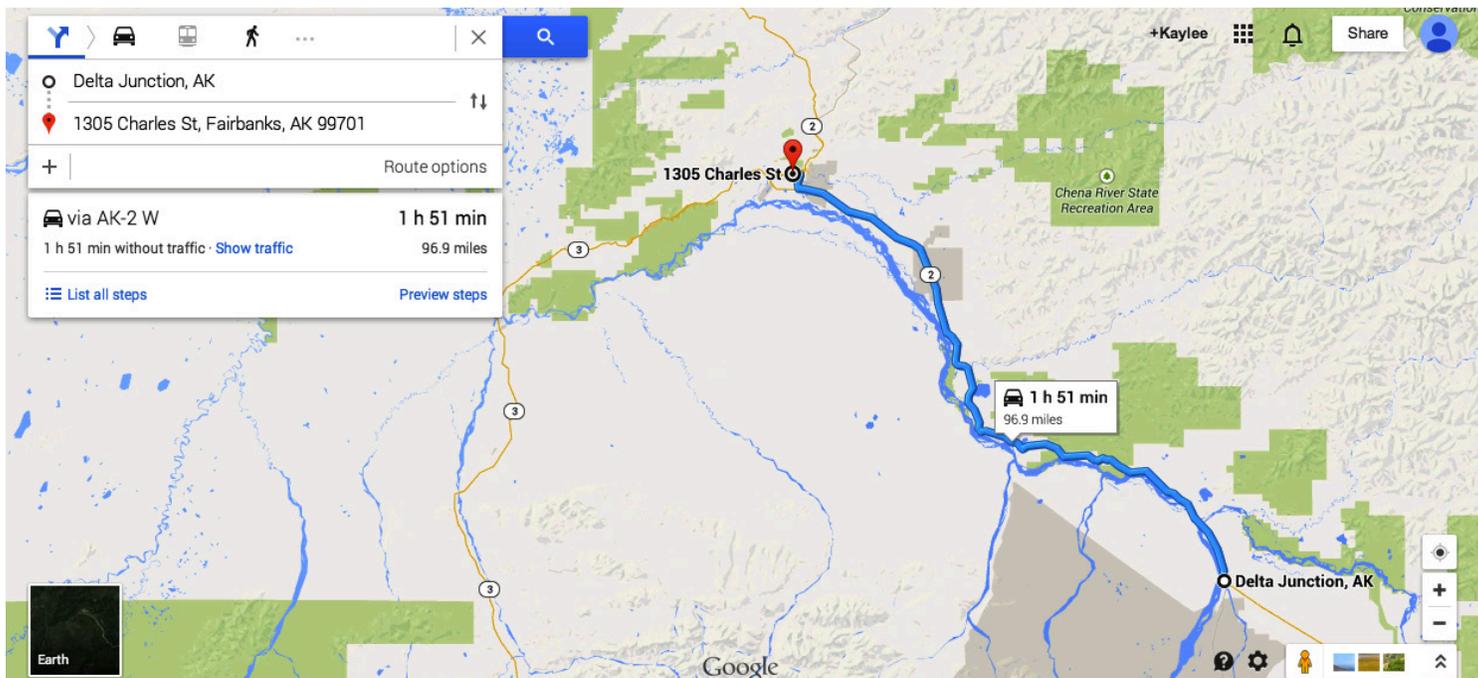
Calories per gram:
Fat 9 • Carbohydrate 4 • Protein 4



Extension tested the new recipe with students and found that students were widely receptive to the new product. The buns have a look and taste that are familiar to students, so it was not immediately apparent to many that the product had been prepared with whole grains.

At the district’s central kitchen, staff prepares 8,000 buns and rolls each week, typically offering them on school menus at least two to three times per week. The district is also beginning to offer breadsticks prepared by simply cutting the same dough recipe into a different shape.

The 51 percent whole grain hamburger bun using locally grown barley costs the district 11.2 cents per bun. This compares to 10.6 cents per bun using the USDA commodity wheat flour recipe that it replaced. The local barley flour costs the school district 65 cents per pound, compared to 42 cents per pound for commercially purchased wheat flour. Recipes for the hamburger bun in different batch sizes are available at http://dnr.alaska.gov/ag/ag_SchoolFood.htm.



A grains and pulses supply chain in Alaska

When the 51 percent whole grain hamburger bun recipe was introduced, the Fairbanks district promoted the product in its school cafeterias. Menus also indicate that the district serves local products when possible.

The family-owned company grows and processes all of the locally grown barley served in the district, providing an easily traceable supply chain from the grower to consumer. It operates the only commercial flour mill in the state of Alaska, providing a critical link in the chain from farm to fork.

Local Food Hero

Alaska Flour Company is the only commercial flourmill in Alaska. The primary reason for starting the flourmill was to increase Alaska's food security.

- Our flour is 100% whole grain flour – nothing removed and nothing added.
- Barley is an ideal crop for Alaska because of its short growing season. It can be grown without irrigation and is higher in protein than barley grown in the lower 48.
- Barley is the oldest known grain. In many parts of the world it is the primary grain for human consumption.
- Barley flour doesn't require a special recipe. You can use your favorite recipes and substitute barley flour for 100% of the flour in most recipes unless making raised breads.
- Our farm is over 1700 acres. We grow wheat, barley, hullless barley, and field peas.

"I love everything about farming! My favorite thing about starting the Alaska Flour Company is the opportunity to grow food for Alaska and cut down on importing food up here." – Bryce Wrigley

In combination with other deliveries to the Fairbanks area, the vendor delivers the product to the district's central kitchen. The district orders several hundreds pounds at a time, which helps to ensure that direct deliveries to the district are financially viable for the vendor. While this model requires an investment of time and resources on behalf of the producer, the company asserts that it fosters a close and mutually beneficial relationship with the school district.⁷

The Alaska Flour Company also supplies hot breakfast programs at a variety of Alaska school districts (including Juneau, Northwest Arctic, Gateway and Petersburg, among others) with its Cream of Barley Breakfast Cereal. Recently, it began to also sell a pancake mix. It developed both products with the K-12 market in mind. Schools now account for approximately 15 percent of the company's business.

The vendor

Located approximately 97 miles away, the Alaska Flour Company supplies the district with 2,000 to 2,500 pounds of hullless⁶ barley flour each year.

Best Practices

- To give yeast breads the proper consistency, barley flour must be mixed with wheat flour. But non-yeast quick breads such as muffins, pancakes, biscuits and scones can be made entirely from barley flour, so adding those items to school menus could increase use substantially.

- The partnership with University of Alaska Fairbanks Extension was key for developing suitable recipes. Tailoring the recipe to the district's existing equipment and staff capabilities also made introducing the product much more workable for foodservice staff.
- It can be challenging for districts as large as Fairbanks North Star Borough to identify farmers and vendors that are capable of fulfilling substantial orders. Assistance from the State has been particularly helpful in identifying vendors that operate at a scale to meet Fairbanks' needs.
- Alaska's school districts are spread across a vast area with widely varying topographies, so meeting distribution needs statewide can be complex. Fortunately, funding through the Nutritional Alaskan Foods in Schools program that is administered by the Department of Commerce was designed to allow districts to cover shipping costs.
- The use of local barley products would not have been possible without the existence of the local mill operated by the Alaska Flour Company. A loan from the Alaska Agricultural Revolving Loan Fund⁸ helped cover the mill's start-up costs, while the state Farm to School program served as an informational resource throughout the process and helped the company address state regulations. This is a good example of how supply chains for local foods can be facilitated through the provision of financing programs for suppliers and processors that play key roles in bringing local foods to market in a form that can be used effectively by local buyers like schools.

Endnotes

1. Rouse, Amy. Director of Nutrition Services, Fairbanks North Star Borough School District. Personal interview. April 23, 2014.

2. An Act establishing the farm-to-school program in the Department of Natural Resources, and relating to school gardens, greenhouses and farms, H.B. 70, 26th Legislature (May 4, 2010) Available at: <http://dnr.alaska.gov/ag/FarmToSchool/HB0070Z.pdf>.

3. "Nutritional Alaskan Foods in Schools," Department of Commerce, Community, and Economic Development. Available at: <http://commerce.alaska.gov/dcra/grt/NAFS.htm> Accessed May 3, 2014.

4. Herron, Johanna. Former Farm to School Program Coordinator, State of Alaska - Division of Agriculture. Personal interview. April 30, 2014.

5. "Farm to School Local Food Hero," Alaska Department of Natural Resources. Available at: http://dnr.alaska.gov/ag/ag_heroFTS.htm. Accessed on April 23, 2014.

6. The "hulless" variety requires less processing than "hulled" barley because its outer, inedible hull grows more loosely on the kernel and detaches during harvesting while keeping more of the bran intact.

7. Wrigley, Bryce. Founder, Alaska Flour Company. Personal interview. April 18, 2014.

8. "Agricultural Revolving Loan Fund," Alaska Department of Natural Resources. http://dnr.alaska.gov/ag/ag_arlf.htm. Accessed June 1, 2014.