

Agronomic Crops Developed in Alaska

Bob M. Van Veldhuizen, Mingchu Zhang, and Charles W. Knight

AFES Publication
MP 2014-01
Updated 11-16

Historical Overview

AGRONOMIC CROP VARIETY TESTING has been conducted in Alaska ever since the Russians established agricultural villages in the early 1800s to support the activities of the Russian American Company. Ninilchik is the only remaining settlement of those original villages, founded as agricultural stations. After Alaska became a territory of the United States, the United States Department of Agriculture (USDA) established a number of Alaska Agricultural Experiment Stations (AAES) to continue the evaluation and cultural development of agronomic crops at Sitka (1898-1932), Kodiak (1989-1925), Kenai (1898-1908), Rampart (1900-1925), Copper Center (1903-1908), Fairbanks (1906-present), and Matanuska (1917-present). Of these stations, Rampart, on the Yukon River, was the main location for testing and breeding agronomic crops at the beginning of the twentieth century. Many of the varieties tested were of Russian and Finnish origins. It was in Rampart that George W. Gasser successfully bred the first agronomic crop for Alaska, ‘Trapmar’ (Rampart spelled backward), a hooded, six-row, hullless spring forage barley that was released in 1920.

Since the early 1950s, the Matanuska Experiment Farm has been the location of all the small grain plant breeding programs. Experimental breeding lines developed by plant breeder Roscoe L. Taylor of the U.S. Department of Agriculture-Agricultural Research Service (USDA-ARS) were tested against the standard varieties at the Palmer, Fairbanks, and Delta Junction sites for a number of years. This resulted in the eventual joint USDA-ARS/AFES release of ‘Lidal’ feed barley (1972), ‘Weal’ hooded barley (1978), ‘Otal’ feed barley (1981), ‘Datal’ feed barley (1981), and ‘Thual’ hullless barley (1981). Also released during this period were ‘Nip’ black oat (1957), ‘Toral’ yellow oat (1977), ‘Ceal’ yellow oat (1978), ‘Gasser’ hard red spring wheat (1953), ‘Chena’ hard red spring wheat (1975), ‘Ingal’ hard red spring wheat (1981), ‘Nogal’ hard red spring wheat (1981), ‘Vidal’ hard red spring wheat (1981), and ‘Bebral’ winter rye (1981). Variety

testing and evaluation were also done at this site primarily to determine plant breeding material.

Beginning in the late 1980s with the hiring of a new AFES plant breeder, Steven M. Dofing, small grain variety evaluations were done at the Palmer, Fairbanks, and Delta Junction sites with an emphasis on determining the genetic diversity of small grains from around the circumpolar north. Information from the genetic diversity study led to crossing existing Alaska barley varieties with new, northern European barley strains for improved vigor, yield, and quality. This resulted in the eventual release of ‘Finaska’ feed barley (2001), ‘Wooding’ feed barley (2006), and ‘Sunshine’ hullless barley (2009). Because of budget reductions, the plant breeding position has since been eliminated.

There has been increased interest since the mid-1950s in producing a locally adapted oilseed crop for the edible oil and biofuel markets. Many species and varieties have been evaluated over the years at multiple locations in Alaska. Most have been late-maturing with low yields and poor-quality seed. The best-adapted, but still marginal, varieties have been the Polish canola and dwarf sunflower varieties. Beginning in the mid-1990s, open-pollinated selections of dwarf sunflowers and Polish canola were made that resulted in the unofficial AFES release of ‘Midnight Sun-flower’ (2008) and ‘Deltana’ Polish canola (2014).

Editor’s note: Unless noted otherwise, seed sources may be located by consulting the Alaska Seed Growers Association or the Alaska Plant Materials Center. Addresses and other contact information are at the end of this document.



Background image: George W. Gasser in the fields at the Fairbanks Experiment Farm.

—Agricultural Experiment Station Collection, Accession #99-288-34,
Archives, Alaska and Polar Regions Collections,
Rasmuson Library, University of Alaska Fairbanks

Feed, Forage, and Hulless Barley Varieties

'DATAL' IS AN EARLY-MATURING, mid-tall, stiff-strawed, rough-awned, six-row, high-yielding spring barley released in 1981 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It is a cross between a six-rowed Swedish cultivar, 'Edda', and an unnamed early-maturing, two-rowed selection from Sweden. The average date of maturity for 'Datal' is around July 26, about one day earlier than the average date of maturity for 'Otal'. Average yields are around 3,777 lbs/acre or 79 bu/acre, slightly less than 'Otal' yields. Test weights are lower than average at 47 lbs/bu. 'Datal' is more susceptible to yield reductions from early-season drought conditions than 'Otal'. It has a fair lodging resistance compared with 'Otal'.

'FINASKA' is an early-maturing, short, stiff-strawed, rough-awned, six-row, high-yielding spring barley released in 2001 by the AFES plant breeding program at the Matanuska Experiment Farm. It is a cross between two six-rowed Finnish cultivars, 'JO 1632' and 'JO 1599'. The average date of maturity for 'Finaska' is around July 25, about two days earlier than the average date of maturity for 'Otal'. Average yields are around 3,953 lbs/acre or 82 bu/acre, slightly more than 'Otal' yields. 'Finaska' has better lodging resistance than 'Otal' but lower test weights at 47 lbs/bu.

'LIDAL' is an early-maturing, mid-tall, stiff-strawed, rough-awned, six-row, high-yielding spring barley released in 1972 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It is a cross between a six-rowed Swedish cultivar, 'Edda', and the early maturing six-rowed cultivar 'Olli' from Finland. 'Lidal' has only a fair resistance to lodging and head shattering compared with 'Otal'. The average date of maturity for 'Lidal' is around July 26, about one day earlier than the average date of maturity for 'Otal'. Average yields are around 3,970 lbs/acre or 83 bu/acre, slightly more than 'Otal' yields. Test weights are average at 48 lbs/bu. 'Lidal' is a good-yielding variety for later planting dates (late May).

'OTAL' is an early-maturing, mid-tall, stiff-strawed, rough-awned, six-row, high-yielding spring barley. It was released in 1981 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It is a cross between a six-rowed Finnish cultivar, 'Otra', and an unnamed early-maturing, two-rowed selection from Sweden. The average date of maturity for 'Otal' is around July 27. Average yields are around 3,841 lbs/acre or 80 bu/acre. Test weights are average at 48 lbs/bu. It has moderate lodging resistance. 'Otal' is the current standard variety against which all other barley varieties are compared in variety trial testing by AFES.

'SUNSHINE' is an early-maturing, mid-tall, stiff-strawed, rough-awned, six-row, naked-kerneled spring barley released in 2009 by the AFES plant breeding program at the AFES Matanuska Experiment Farm. It is a cross between the hulless Alaska cultivar 'Thual' and the hulled Finnish cultivar 'JO 1632'. The average date of maturity for 'Sunshine' is around July 22, about five days earlier than the average date of maturity for 'Otal'. Average yields are around 3,069 lbs/acre or 51 bu/acre, less than 'Otal' yields. Test weights are slightly higher than average at 57 lbs/bu. 'Sunshine' has about the same lodging resistance as 'Otal'. 'Sunshine' is earlier to mature than 'Thual' hulless barley, produces higher yields, and has greater lodging resistance. It is susceptible to loose smut and fusarium blight, which can be controlled with seed treatments. To locate seed sources, contact the Alaska Flour Company or Stu Davies.

'SVENDAL' is an early-maturing, mid-tall, stiff-strawed, rough-awned, six-row, high-yielding spring barley released in 1982 by Barney Hollembaek of Alamasu,

'Finaska' barley growing in fields at the Fairbanks Experiment Farm. AFES photo by Bob Van Veldhuizen





'Sunshine' hulless barley. AFES photo by Bob Van Veldhuizen

Inc. in Delta Junction, Alaska. It is a cross between the six-rowed Alaska cultivar 'Lidal' and the early-maturing, six-rowed Swedish cultivar 'Edda'. The average date of maturity for 'Svendal' is around July 26, about one day earlier than the average date of maturity for 'Otal'. Average yields are around 3,152 lbs/acre or 66 bu/acre, slightly less than 'Otal' yields. Test weights are lower than average at 47 lbs/bu. 'Svendal' has better lodging resistance than 'Otal'. To locate seed sources, contact Alamasu, Inc.

'**THUAL**' is an early-maturing, mid-tall, moderately stiff-strawed, rough-awned, six-row, naked-kerneled spring barley released in 1981 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It is a cross between the six-rowed hulled Finnish cultivar 'Otra' and an unnamed hulless line from Ireland. 'Thual' is one of the first released hulless varieties to mature and produce yields comparable to yields from hulled varieties such as 'Otal'. The average date of maturity for 'Thual' is around July 27, about the same as the average date of maturity for 'Otal'. Average yields are around 2,911 lbs/acre or 49 bu/acre, considerably less than 'Otal' yields. Test weights are average 56 lbs/bu. In most years, its moderate straw strength causes a higher percentage of lodging when compared with 'Otal', which leads to harvesting problems and yield losses. It is susceptible to loose smut and fusarium blight, which can be controlled with seed treatments. To locate seed sources, contact the Alaska Seed Growers Association, the Alaska Plant Materials Center, or Stu Davies.

'**TRAPMAR**' is a mid- to late-maturing, tall, stiff-strawed, hooded, six-row, naked-kerneled spring forage barley released in 1920 by the USDA-ARS plant breeding program at the Rampart Experiment Station (since closed). It was a selection from a Siberian line obtained from Tulun, a small town in Irkutsk Oblast, Russia, in 1913. Prior to its release, 'Trampar' (Rampart spelled backwards) was known as 'Siberian 19b' in selection and evaluation trials. Like the barley awns of 'Weal', the hooded awns of 'Trapmar' are winged and hollow rather than rough and spiked, so this variety was developed as a dual-purpose grain for both human consumption and for use as a forage crop. The average date of maturity for 'Trapmar' is around August



'Weal' forage barley at the Fairbanks Experiment Farm (note the hooded awns). AFES photo by Bob Van Veldhuizen

'Wooding' barley, below, at the Fairbanks Experiment Farm. AFES photo by Bob Van Veldhuizen

11, considerably later than the average date of maturity for 'Otal'. Average yields are around 3,086 lbs/acre or 64 bu/acre, considerably less than 'Otal' yields. Test weights are average at 56 lbs/bu. 'Trapmar' matures later than either 'Sunshine' or 'Thual' hulless barley but produces similar yields and has similar lodging resistance. It is susceptible to loose smut and fusarium blight, which can be controlled with seed treatments. This variety is no longer grown commercially, so seed sources are limited to small samples for demonstration purposes and are located at the AFES Fairbanks Experiment Farm.

'**WEAL**' is an early-maturing, tall, stiff-strawed, hooded, six-row, high-yielding spring barley released in 1978 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. Because the hooded barley awns are winged and hollow rather than rough and spiked, 'Weal' was developed primarily for use as a forage crop, although dry matter yields are slightly less than the best oat varieties. It is fairly resistant to lodging and can withstand high winds. The average date of maturity for 'Weal' is around July 26, about one day earlier than the average date of maturity for 'Otal'. Average yields are around 3,282 lbs/acre or 68 bu/acre, slightly less than 'Otal' yields. Test weights are lower than average at 43 lbs/bu because the hooded awns remain on the seed after threshing. 'Weal' yields are more likely to be reduced because of early-season drought conditions than are 'Otal' yields.

'**WOODING**' is an early-maturing, mid-tall, stiff-strawed, rough-awned, six-row, high-yielding spring barley released in 2006 by the AFES plant breeding program at the AFES Matanuska Experiment Farm. It is a cross between the early-maturing, six-rowed Alaska cultivar 'Otal' and the six-rowed Finnish cultivar 'JO 1632'. 'Wooding' was named to honor the late Dr. Frank J. Wooding, professor emeritus of agronomy at the UAF School of Natural Resources and Agricultural Sciences. The average date of maturity for 'Wooding' is around July 25, about two days earlier than the average date of maturity for 'Otal'. Average yields are around 3,783 lbs/acre or 79 bu/acre,



slightly less than 'Otal' yields. Test weights are average at 48 lbs/bu. 'Wooding' has better lodging resistance than 'Otal'.

Yellow and Black Feed Oat Varieties

'CEAL' IS AN EARLY-MATURING, short, stiff-strawed, high-yielding, white-glumed, spring feed oat released in 1978 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It was selected from a cross between 'Climax', an early-maturing oat from Sweden, and a later-maturing, high-yielding, yellow-glumed oat, 'Eaton', from Michigan. It matures two to three days earlier than 'Toral' and yields slightly less seed and forage than 'Toral'. The average date of maturity for 'Ceal' is around July 28, earlier than the average date of maturity for 'Toral'. Average yields are around 2,569 lbs/acre or 80 bu/acre, considerably less than 'Toral' yields. Test weights are higher than average at 39 lbs/bu. 'Ceal' is a good oat for grain production in areas where oat maturity has been marginal. However, it is not recommended for annual forage mixtures because it matures much earlier and yields less biomass because of its short height. However, 'Ceal' has excellent lodging resistance because of its short height.

'NIP' is an early-maturing, tall, stiff-strawed, high-yielding, black-glumed, spring feed oat unofficially released in 1957 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It is a black oat selection from Sweden. The average date of maturity for 'Nip' is around August 6, much later than the average date of maturity for 'Toral'. Average yields are around 3,539 lbs/acre or 111 bu/acre, slightly less than 'Toral' yields. Test weights are average at 35 lbs/bu. It has good resistance to lodging and produces good yields of both seed and forage. It can be planted late and still produce good seed yields. It also has fairly good tolerance to late-summer and early-fall frosts. 'Nip' matures three to five days later than 'Toral' and produces slightly lower seed yields but higher forage yields. Seed sources for 'Nip' are only available in Alaska.

'TORAL' is a midseason, tall, stiff-strawed, high-yielding, yellow-glumed, spring feed oat released in 1977 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It was selected from a cross between an early-maturing, black-glumed oat from Sweden, 'Orion III', and a later-maturing, high-yielding, yellow-glumed Polish oat, 'Tatzanski'. The average date of maturity for 'Toral' is around August 1. Average yields are around 3,886 lbs/acre or 121 bu/acre. Test weights are higher than average at 39 lbs/bu. 'Toral' is a good general-purpose oat with consistently high yields for both seed and forage and good resistance to lodging. 'Toral' is the current standard variety against which all other oat varieties are compared in variety trial testing by AFES.

'Toral' general-purpose oats. AFES photo by Bob Van Veldhuizen





Robert Van Veldhuizen harvesting 'Berbral' winter rye at the Fairbanks Experiment Farm in 2006. AFES file photo

Hard Red Spring Wheat and Winter Rye Varieties

'BEBRAL' IS A LATE-MATURING, very tall, stiff-strawed, high-yielding, winter rye released in 1981 from the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. As a winter grain, it is planted in mid-August and harvested in early September of the following year. It is susceptible to winter kill and snow-mold fungal attacks during the winter. This has the potential to lower seed and forage yields. 'Bebral' matures only two to three days later than 'Ingal' hard red spring wheat and has yields that are slightly lower than or equal to yields of 'Ingal'. The average date of maturity for 'Bebral' is around August 2, later than the average date of maturity for 'Ingal'. Average yields are around 2,487 lbs/acre or 41 bu/acre, about the same as 'Ingal' yields. Test weights are lower than average at 46 lbs/bu. Because of its tall height it produces good forage yields with moderate lodging resistance.

'CHENA' is an early-maturing, mid-tall, stiff-strawed, red-glumed, red-kerneled, awned, experimental hard red spring wheat (Canadian hard red spring bread wheat) unofficially

released in 1973 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It is a single-head selection that came from the Rovaniemi Agricultural Experiment Station in Finland in 1970. The average date of maturity for 'Chena' is around August 3, later than the average date of maturity for 'Ingal'. Average yields are around 4,112 lbs/acre or 69 bu/acre, higher than 'Ingal' yields. Test weights are average at 58 lbs/bu. 'Chena' matures later by three to five days than does 'Ingal', but it is higher yielding, with equal test weights due to the larger kernels. It has good resistance to lodging. 'Chena' is satisfactory for milling and baking. This variety is no longer grown commercially, so seed sources are limited to small samples for demonstration purposes at the AFES Fairbanks Experiment Farm.

'GASSER' is an early-maturing, mid-tall, stiff-strawed, red-glumed, red-kerneled, awned, hard red spring wheat (Canadian hard red spring bread wheat) released in 1953 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. 'Gasser' was named to honor Dr. George W. Gasser, agronomist at the Rampart and Fairbanks experiment stations. He was a pioneer in agricultural development in Alaska and former commissioner of agriculture. 'Gasser' was selected from a 1940 cross between an early Swedish variety, 'Diamond', and an early-maturing Russian variety, 'Khogot'. Prior to the release of 'Gasser', 'Khogot' was the earliest-

maturing wheat variety tested in Alaska, and was formerly known as ‘Siberian 1’. Unfortunately, ‘Khogot’ has small seeds that shatter easily at maturity and it lodges badly. ‘Gasser’ matures three to five days later than ‘Khogot’ but has superior yields and lodging resistance similar to that of ‘Ingal’. The average date of maturity for ‘Gasser’ is around August 3, slightly later than the average date of maturity for ‘Ingal’. Average yields are around 2,847 lbs/acre or 47 bu/acre, about the same as ‘Ingal’ yields. Test weights are slightly lower than average at 55 lbs/bu. It is unsatisfactory for milling and baking and should be used as animal feed. This variety is no longer grown commercially so seed sources are limited to small samples for demonstration purposes at the AFES Fairbanks Experiment Farm.

‘**INGAL**’ is an early-maturing, semi-dwarf, stiff-strawed, red-glumed, red-kerneled, awned, hard red spring wheat (Canadian prairie spring wheat) released in 1981 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It was selected from a cross between a variety developed in Alaska, ‘Gasser’, and ‘Norin No. 16’, from the USDA World Wheat Collection. The average date of maturity for ‘Ingal’ is around July 31. Average yields are around 2,684 lbs/acre or 45 bu/acre. Test weights are slightly lower than average at 59 lbs/bu. Seed kernels of ‘Ingal’ are smaller than average and require modifications to drill seed metering and combine settings at harvest. Also, ‘Ingal’ is prone to head shatter at harvest in adverse weather conditions, such as heavy rains or high winds. As a semi-dwarf variety, ‘Ingal’ has good resistance to lodging. It is satisfactory for milling and baking. ‘Ingal’ is the current standard variety against which all other wheat and rye varieties are compared in variety trial testing by AFES.

‘**NOGAL**’ is an early-maturing, mid-tall, stiff-strawed, red-glumed, red-kerneled, awned, hard red spring wheat (Canadian hard red spring bread wheat)

‘Ingal’ red spring wheat growing at the Fairbanks Experiment Farm. AFES photo by Bob Van Veldhuizen



released in 1981 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It was selected from a cross between a variety developed in Alaska, 'Gasser', and a Norwegian cultivar, 'Norrone'. The average date of maturity for 'Nogal' is around August 2, slightly later than the average date of maturity for 'Ingal'. Average yields are around 3,201 lbs/acre or 53 bu/acre, higher than 'Ingal' yields. Test weights are slightly lower than average at 58 lbs/bu. 'Nogal' matures three to five days later than 'Ingal' but is higher-yielding with equal test weights due to the larger kernels. It has good resistance to lodging. 'Nogal' is satisfactory for milling and baking.

'VIDAL' is an early-maturing, mid-tall, stiff-strawed, red-glumed, red-kerneled, awned, hard red spring wheat (Canadian hard red spring bread wheat) released in 1981 by the USDA-ARS plant breeding program at the AFES Matanuska Experiment Farm. It was selected from a cross between a variety developed in Alaska, 'Gasser', and an unnamed Scandinavian variety. The average date of maturity for 'Vidal' is around August 4, much later than the average date of maturity for 'Ingal'. Average yields are around 2,892 lbs/acre or 48 bu/acre, about the same as 'Ingal' yields. Test weights are lower than average at 53 lbs/bu. 'Vidal' is later-maturing by five to seven days than 'Ingal' with equal yields and lower test weights due to the larger percentage of immature kernels. It has good resistance to lodging. Because of its low test weights, 'Vidal' is unsatisfactory for milling and baking and should be used as animal feed. This variety is no longer grown commercially, so seed sources are limited to small samples for demonstration purposes at the AFES Fairbanks Experiment Farm.

Polish Canola and Dwarf Sunflower Oilseed Varieties

'DELTANA' IS AN EARLY-MATURING, mid-tall, high-yielding, low-erucic acid, low-glucosinolate, edible-oil, open-pollinated spring Polish canola developed and unofficially released by the AFES agronomy research program at the Fairbanks Experiment Farm in 2014. It is an open-pollinated combination of other early-maturing Polish canola varieties: 'AC Sunbeam', 'Colt', 'Eldorado', 'Horizon', 'Hysyn 110', 'Maverick', and 'Reward'. It matures about the same time as 'Reward' and has similar yields and percent green seed. The average date of maturity for 'Deltana' is around August 14. Average yields are around 1,323 lbs/acre or 27 bu/acre for seed and 34 gal/acre of oil (hot-press extraction only). Test weights are higher than average at 50 lbs/bu. Lodging resistance is moderate under normal soil fertility conditions. To locate seed sources, contact the Alaska Flour Company.

'MIDNIGHT SUN-FLOWER' is an early-maturing, dwarf, open-pollinated, oilseed sunflower unofficially released in 2008 by the AFES agronomy research program in Fairbanks. Starting in 1993, seeds were collected from the earliest-maturing heads of the 'Sunwheat 103' variety in the Fairbanks area. These

Polish canola in the foreground, growing at the Fairbanks Experiment Farm. AFES photo by Bob Van Veldhuizen





'Midnight Sun-flower' oilseed sunflower, in fields at the Fairbanks Experiment Farm. AFES photo by Bob Van Veldhuizen

seeds were hand-threshed, cleaned, and planted in test plots the following season. This process has been repeated every year since then. Since 'Sunwheat 103' is a hybrid semi-dwarf sunwheat, there was considerable variation in the following years' crops. However, continued selection for early maturity and high seed yields has resulted in an increasingly uniform, open-pollinated dwarf sunflower that closely resembles the Canadian Sunola varieties. To date, the plants are quite dwarf, averaging 20 to 24 inches tall and with head diameters of close to six inches. It matures two to three weeks earlier than 'Sunwheat 103' and four to five weeks earlier than common sunflowers. The average date of maturity for 'Midnight Sun-flower' is around July 28. Average yields are around 1,373 lbs/acre or 55 bu/acre for seed and 45 gal/acre of oil (hot-press extraction only). Test weights are slightly lower than average at 24 lbs/bu. Because of the plant's smaller size, planting is similar to Sunola, with about 60,000 plants per acre. This results in yields equal to those of 'Sunwheat 103'. However, because this is an open-pollinated crop, there is still some variability among plants. To locate seed sources, contact the AFES Fairbanks Experiment Farm.

For more information, please see:

ALAMASU, INC.: Kay Hollembaek, Rural Route HC 62, Box 5580, Delta Junction, AK 99737. Phone: 907-895-4715.

ALASKA FLOUR COMPANY: www.alaskaflourcompany.com

ALASKA PLANT MATERIALS CENTER: 5310 South Bodenburg Spur, Palmer, AK 99645. Phone: 907-745-4469, fax: 907-746-1568, <http://plants.alaska.gov>.

ALASKA SEED GROWERS ASSOCIATION: P.O. Box 895, Palmer, AK 99645. Phone: 907-745-4004, fax 907-745-4728.

STU DAVIES: farmerstudavies@hotmail.com, 907-322-8382.

VAN VELDHUIZEN, BOB. 2010. *Growing Small Grains in Your Garden*. AFES Circular 135. University of Alaska Fairbanks, Agricultural and Forestry Experiment Station.

VAN VELDHUIZEN, ROBERT M., MINGCHU ZHANG, AND CHARLES W. KNIGHT. 2014. *Performance of Agronomic Crop Varieties in Alaska, 1978-2012*. AFES Bulletin 116. University of Alaska Fairbanks, School of Natural Resources and Agricultural Sciences/Agricultural and Forestry Experiment Station.

AFES/USDA-ARS Agronomists and Plant Breeders 1920s to present

DR. GEORGE W. GASSER, USDA-ARS Assistant Superintendent/Agronomist, Rampart Experiment Station 1908-1920 and Fairbanks Experiment Station 1921-1928, Professor of Agriculture, Alaska Agricultural College and School of Mines (now University of Alaska Fairbanks) 1928-1945, Commissioner of Agriculture, Territory of Alaska 1946-1953.

DONALD L. IRWIN, AFES Agronomist and Superintendent of the Matanuska Experiment Station, Director of the Alaska Agricultural Experiment Stations, Palmer 1932-1967, General Manager of the Matanuska Colony Project, 1935 and 1945.

JOHN C. BRINSMAD, JR., AFES Agronomist, Fairbanks Experiment Station 1946-1964.

DR. ROSCOE L. TAYLOR, AFES and USDA-ARS Agronomist/Plant Breeder, Matanuska Experiment Station, Palmer Research and Extension Center (now Matanuska Experiment Farm) 1953-1987.

DR. FRANK J. WOODING, AFES Agronomist, Fairbanks Experiment Station and Delta Junction Field Research Site, Professor Emeritus of Agronomy, University of Alaska Fairbanks 1970-1993.

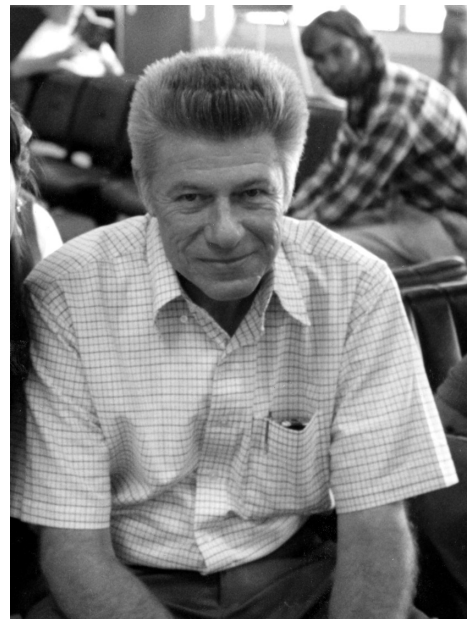
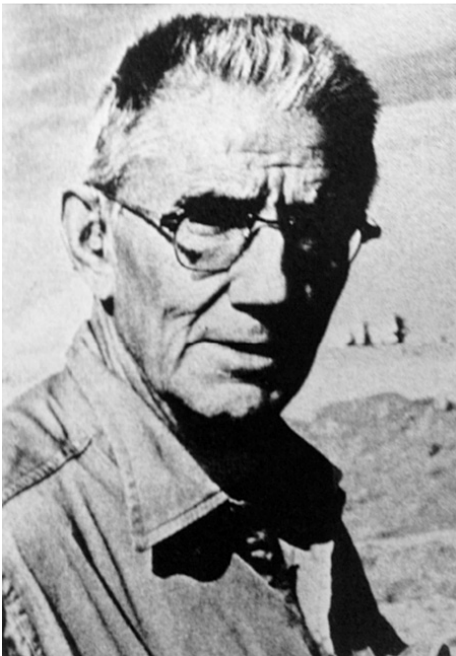
DR. CHARLES W. KNIGHT, AFES Agronomist, Fairbanks Experiment Station and Delta Junction Field Research Site, Professor Emeritus of Agronomy, University of Alaska Fairbanks 1978-2002.

DR. STEVEN M. DOFING, AFES Agronomist/Plant Breeder, Matanuska Experiment Station, Palmer Research and Extension Center (now Matanuska Experiment Farm) 1988-1999.

DR. MINGCHU ZHANG, AFES Agronomist, Fairbanks Experiment Station and Delta Junction Field Research Site, Professor of Agronomy, University of Alaska Fairbanks, 2002-present.



Above: George W. Gasser



Clockwise from lower left: Donald L. Irwin, John C. Brinsmade, Roscoe L. Taylor, Frank J. Wooding, Charles W. Knight. AFES file photos





Top: Cow moose browsing in experimental fields August 4, 2011 in Delta. In the foreground is barley, and from left to right are wheat, oats (where the cow is standing), and field peas. Behind her are rows of potatoes.

Middle: Closeup of honeybee on Polish canola blossoms growing at the Fairbanks Experiment Farm. AFES photos by Bob Van Veldhuizen

Right: Steven M. Dofing. AFES file photo



Far right: Mingchu Zhang. UAF photo by Todd Paris

Agricultural and Forestry Experiment Station

University of Alaska Fairbanks
 P.O. Box 757200
 Fairbanks, AK 99775-7200
www.uaf.edu/snre/research/afes
snrenews.blogspot.com
 phone: 907-474-7188
 fax: 907-474-6184

NOTE: 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 available only to a limited professional audience. They may consist of secondary information or be a bulletin or journal article summary.

To simplify terminology, we may use product or equipment trade names. We are not endorsing products or firms mentioned. Publication material may be reprinted provided no endorsement of a commercial product is stated or implied. Please credit the researchers involved, the University of Alaska Fairbanks, and the Agricultural and Forestry Experiment Station.

The University of Alaska Fairbanks is accredited by the Commission on Colleges and Universities of the Northwest Association of Schools and Colleges. UAF is an affirmative action/equal opportunity employer and educational institution.

Agricultural & Forestry Experiment Station



SCHOOL OF NATURAL
 RESOURCES AND EXTENSION

University of Alaska Fairbanks

About the Agricultural and 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. The first student graduated in 1923. In 1931, the experiment station was transferred from federal ownership to the college, and in 1935 the college was renamed the University of Alaska. 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.